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THE UNIVERSITY SURGICAL CLINIC

ITS FUNCTIONS AND ORGANIZATION *

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Each generation has its own problems to solve. Not infrequently these are not new. Many are inherited from a previous generation or generations. Some have been partially solved; some have never been taken from the pigeonhole in which they have been conveniently placed.

The question which is being asked almost constantly these days is, What is the object of medical education? This question being answered by the doctor or educator most vitally interested, he usually proposes some system of education which is guaranteed to remedy all the defects and to lead rapidly to the establishment of the ideal. At present there is no need to enumerate the panaceas which have been suggested which, if taken, would place the recent graduate in his proper relation to the patient, to investigation, to industry and to the rural communities which, if they do not organize in self defense, are apt to have forced on them a mediocre profession by some of our most practical medical educators.

Each succeeding generation should start higher in the scale of knowledge than the preceding one. If the recent graduate were to be content with the knowledge of the preclinical branches that most of us have after several years of what may be designated as fairly successful clinical work, the level of the profession would sink rather than rise with each succeeding generation.

The object of a medical education is to enable the student to attain the highest level of knowledge in the field of medicine and its subsidiary branches attainable for him within the limits of time which may be given to the subject, when provided with the needed and best attainable physical equipment. The faculty should arrange the student's time and the sequence of subjects taught, and the lay boards of universities and hospitals should supply the necessary equipment running smoothly so that this educational system may go on indefinitely without jars and an ever increasing efficiency in productive scholarship. The most intimate relationship is thus established between trustee, teacher and student. Judging from the literature which has accumulated on medical education during the last sixty or seventy years, I believe that we are justified in stating that the progress has been slow. High points have been reached; then the wave has receded to a dead level. We are still looking for the ideal curriculum, discussing the elective system; academic freedom; the type of professor required; the method of his appointment; the character of examination given by state and national boards; whether the part or full time system is best, and whether the clinical studies should be carried on in preclinical years.

The following statement, made about fifty years ago, seems essentially modern:

> If I am not mistaken, our medical faculties are just now generally inclined to give greater weight to academic work; hence the cries of the Philistines to the effect that practical sound training of the physician is being neglected and that too much weight is placed on scholarship. Even if this be granted in certain respects, and it is true that definite methods of instruction have not been found for much of the new content given to the natural sciences through the investigations of the last decade, I can see in it no great misfortune or any reason for threatening to change the character of our universities. It would surely have been much more regrettable if other nations had surpassed us in scientific research while we clung to cast iron forms.

This statement seems quite modern and up to date. The seeming desire or so-called need of making all medical education practical is discussed ad libitum today. There can be little argument—scientific education is the most practical; for practice must be based on facts revealed by science, and the scientifically prepared physician will be able to render to the sick in his community a service, not necessarily a sympathy, which is dependent largely on the character of the man, the value of which cannot be measured.

The present day tendency to place clinical subjects in preclinical years seems to me to be bad. There should be no need of making concessions in order to interest the student in preclinical subjects which form the foundations of the clinical branches, if they are properly presented.

The student acquires the sense of scientific training only in his student days. A developing scientific spirit is often completely killed by the early development of medical routine. The importance of an early scientific medical training cannot be overemphasized. The interest developing from a spirit of investigation or close thinking often determines the student's intellectual level for the remainder of his life.

DEFECTS IN MEDICAL EDUCATION

There are defects in any system. These, perhaps, are not due so much to the system as to human nature, and there is a good deal of human nature in all of us. I have been associated with medical students for a

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* Delivered at a dinner given Dr. Lewis, Jan. 22, 1926, by the surgical staff of Johns Hopkins University Medical Department, alumni and friends.

number of years as a teacher of anatomy and surgery, and from time to time have been greatly discouraged and disappointed because principles were not known, facts forgotten and the relative values of different clinical phenomena unappreciated. We are inclined to think that the student should be as familiar with these things as we are, and disregard the fact that twenty years should permit one to accumulate many facts, if we are endowed with only an ordinary mental equipment. The teacher should place himself in the student's position, rather than place the student in his. A regard for the relative position of the two as to time and experience is hard to maintain.

The two great defects in medical education at the present time are the failure to bridge the gap between the preclinical and the clinical years and to correlate clinical and pathologic findings, thus giving the picture of disease as a whole. Preclinical teachers are often severely criticized because of what is regarded as poor preparation of students when they reach the clinical years. Each preclinical subject is a science in itself and should be so taught; but from time to time the application of the science to the clinic might be taught to advantage. The teachers are often separated and have no opportunity or even make no effort to know the problems which they have in common and which might easily be solved by free discussion. It is as much the function of the clinical teacher to carry on some of this instruction through the clinical years as it is the function of the preclinical teacher to initiate it. It would be an excellent idea for the anatomist and surgeon, the pathologist and the professor of medicine, the pharmacologist and the professor of therapeutics and medicine to meet groups of students or the entire class during the last quarter or trimester of the second year and discuss freely the scientific phases of their work and the application of principles learned to disease and injury. It is much more important that the teachers know and understand one another's points of view, problems and methods than that clinical work be begun early in the medical curriculum.

Medical teaching is disconnected. It is rare for a student to observe disease throughout its entire course or treat an injury from its inception to recovery, when the patient can be returned to the work in which he was originally engaged. He may observe the gross clinical picture at one time, the gross pathologic picture at any other, and the microscopic at still another. These may even be demonstrated in other departments. Too frequently the whole picture is not presented and impressions which should be correlated are disconnected. But rarely with a small material, for example, is a student able to follow a fracture throughout its entire course, to note the indications for a change of fixation or traction apparatus, to study the progress by roentgen-ray examination and to follow the nerve and muscle injuries which are not infrequently associated with the fracture. This sometimes is due to a low bed capacity, and the turnover must be rapid in order to provide a diversity of clinical material. The argument is frequently made that a large material is not necessary, because diagnosis is taught in other departments, and that repetition is not necessary. Clinical knowledge is based on accurate observation. Variation in the clinical picture must be recognized if a clinician is to be developed, and repetition may become the basis of knowledge.

During the last few years, there has been a tendency to minimize the importance of clinical medicine and surgery. While a firm believer in the laboratory and its place in the general scheme of medical education and practice, I believe that the importance of the laboratory has been overemphasized. During a reform there is always a tendency for the pendulum to swing too far. We are not as keen observers or reasoners as the practitioners of the preceding generations. History taking is neglected, and the five senses are atrophied or rapidly becoming so from disuse or insufficient use. It is so much simpler now to make roentgen-ray examinations in case of a suspected fracture than to study deformities, determine the point of tenderness and make accurate measurements, that the old well known signs and symptoms of fracture and dislocations are hardly known. Clinical methods must be emphasized and taught, with the distinct understanding that laboratory findings will be used as supplementary facts to aid in the solution of the problem. The tendency to return to a sane, well developed scheme, in which the patient is still in the center of the picture from which the clinician cannot divorce himself, is rapidly developing. The percentage of error in diagnosis is undoubtedly much higher in that so-called clinician who relies largely on laboratory data as a diagnostic method than in the clinician who deals primarily with the patient and uses laboratory findings as needed and in their proper place. The test of the system is the highest percentage of correct conclusions.

Sometime in his course the student should do intensive work in some subject. He should be thorough, for if he does thorough work in one subject he has laid the foundation for a career which will be satisfying. He will have a hobby which he may ride.

During the last few years, the medical curriculum has been changed from time to time; many different instructional methods have been devised, and it has at times seemed to me that an almost continuous experimental program has been tried out on the medical student. Freedom in a curriculum is absolutely necessary and equally so is discipline. Ability and talents are not hampered or stifled in their development by strict discipline, if opportunity is afforded for scientific and advanced clinical work after the prescribed course is completed. It has been wisely said that no amount of discipline will transform slack, lazy, stupid students into energetic, industrious, intelligent doctors. If discipline will not work this startling transformation, it is more than certain that the spoon feeding of many of the ideal or standard curriculums will not make a hardy, self reliant, independent, thoughtful practitioner out of a fat, pasty, rickety student.

RESEARCH

Some of the students, stimulated by contact with a suggestive teacher or because endowed with imagination or curiosity, will attempt investigation. Not infrequently, I am amazed at the conviction of some of those in authority that students with investigative ability can be selected with certainty and ease. Many who discuss this most glibly are entirely lacking in this ability themselves, and would never strike a spark of imagination in any with whom they come in contact. Christian, in an address made at Chicago recently, emphasizes the difficulty of selecting students with investigative ability, and states that some schools taking only a few students have not justified the claims made in their selection.

Investigators are born, not made, and their true worth is often unrecognized by those of their own generation. Disagreeing with those in authority and running counter to tradition, they not infrequently encounter difficulties.

Investigation must be carried on. Vocal research is to be discouraged, especially that type which is so anxious to see that the other man should have the opportunity. Research is fostered by precept rather than by preachment. What is research? It has been described as a frame or attitude of mind. Medical research is the by-product of medical education. Unless a student comes in contact early with a man with an investigative turn of mind, he will not be inspired to search for the new and unknown, or even become familiar with the methods employed.

Billroth has defined research as well as any one I know. His definition justifies the smallest effort. He states that there are questions to which there are no intuitive answers. Observation must be deepened to scientific research, and that means long, hard work. Nature yields her secrets only in return for arduous labor. The method of research, of positing the question and answering the question posited is invariably the same whether we have before us a blooming rose, a diseased grape vine, a shining beetle, the spleen of a leopard, a bird's feather, the intestines of a pig, the brain of a poet or philosopher, a sick poodle, an hysterical princess, or a fractured femur. The most essential task of the study of science is precisely to convince the student of this and to familiarize him with it.

There is apt to be a lack of sympathy between the preclinical teacher and the clinician. Frequently, they do not have a proper appreciation of the character and value of each other's work. When teaching anatomy, I have not infrequently heard the clinician who attempted to analyze critically 100 cases of gallstones or 100 cases of duodenal ulcer, in order to determine accurately the symptoms, chemical changes in the gastric juice, indications for operation, and prognosis, spoken of rather derisively, and later, as a surgeon, I have seen a half pitying smile cross the clinician's face when vital staining of the islands of Langerhans was discussed. The attitude of mind with which the problem is approached is the important thing. Hasty publication should be discouraged. The man must be judged by the work which stands the test of analytic controls, rather than by the amount which is put out. It is unfortunate that from time to time appointments are made on research, in which the problem is suggested to the man, the method of attack determined, and the results put together by the director of a department. The early sterility of men who supposedly made brilliant beginnings is thus readily understood. Investigation should be independent. The problem may be suggested by another; the line of the attack and the solution of the problem should be determined and made independently.

Research is to be cultivated and the attitude of mind commended, even if the results are small. But few revolutionize the subject in which they are working and many contribute small beginnings which, accumulating, hasten the solution of the great problem.

INFLUENCE OF PERSONALITY

Teaching and the encouragement of research are two of the functions of a surgical department, the establishment of a school of surgeons the third. It has fallen to the lot of but few surgeons so to influence a group of young men that they have contributed to the science and teaching of surgery and have in turn developed a group to carry on the work. It is difficult, almost impossible, to determine the qualities which enable a man to do this. He must have the ability to recognize unusual talents in young men; must be unselfish, giving the brilliant student full opportunity and credit for his work, and must be willing to delegate to men in his department responsibilities in organization and teaching. Founders of schools differ widely in personality, but they have one thing in common. They attract men from far and near. Sometimes regarded as visionary, frequently highly imaginative, they impart to those about them an irresistible urge to seek knowledge for its own sake. The influence of such men is best indicated by a tribute paid by Johannes Müller to Rudolphi. It is as follows:

> Rudolphi was no less great as a man than as a scholar. Any one who knew him was bound to love and respect him, even though his frankness of speech might sometimes hurt a little; one could not long resist his charm. What above everything else he demanded of people was righteousness, honesty of mind and freedom from all unworthy motives. When he found these qualities he gave of himself without reserve, and never again allowed himself to be deceived by appearances. His real self finds expression in his poems, in which he often speaks of friendship. Whenever I recall his frank, cheerful, dignified features, his kindly seriousness, the energy and integrity of his character, I am deeply moved. In an ignoble mood I should avoid looking at the portrait of my fatherly counselor, and it is when I recall the noblest experiences of my life that I think at once of Rudolphi.

This is one of the finest tributes ever paid to a man. One must concede that it is the personal influence or the personality of a man that is the principal leaven in the development of a school. There are other contributing factors provided by the vision of the leaders. During the last fifty years few have equaled, none have surpassed, the German school of surgery. Langenbeck produced Esmarch, Billroth, and finally Kocher. The men to whom he gave the urge were placed in Germany, Austria, Holland, Serbia and Switzerland, and while only few knew him personally or were even in intimate relation with him, they were unconsciously influenced by his spirit and idealism handed down by other men.

ORGANIZATION

Besides personality, which is perhaps the most important, is organization. Early German surgery was distinctly influenced by the French school. Young German students journeyed to Paris to sit at the feet of Petit, Le Dran, Desault, Chopart, Dupuytren, Velpeau and Nelaton. For some reason the French school became less influential and stimulating, and the German school of surgery flourished. The spirit of teaching, investigation and cooperation which leads to the development of a school cannot be wooed with riches. Unexpectedly, often without any plausible explanation, she flees the favored spot and causes to burst into bloom sterile fields, out of which it has been steadfastly maintained that nothing good could come. She can be wooed only by arduous labor, self denial and idealism.

Organization is necessary in the development of a school. It has always seemed to me that in this country we have paid too much attention to the older men in the organization. The men in the surgical department who should have the greatest consideration and the fullest opportunity are the young men who, on graduation, show an inclination combined with ability for surgery, surgical investigation and teaching. A young man in a department should be relieved as largely as possible of routine operating and the routine care of patients, having at least half of his day free for work in the experimental surgical laboratory or in the laboratories of anatomy, physiology and pathology, to which he should have free and easy access. He should have ample opportunity to progress in the system, so that each year responsibilities commensurate with his development *may be given him. He should be paid a living* wage. Universities at the present time are in sharp competition with private clinics, which are able to pay higher salaries and not infrequently have a large material. In some of these clinics, the men never reach the position they desire. The system easily becomes blocked. There are several factors which militate against the development of any great number of schools in this country. Owing to certain defects in our educational system, men enter professional schools at a relatively late age and of necessity graduate late in life. The graduate should enter at an early age the school in which he develops, for the early productive years of his life should be devoted to the specialty which he selects. The salaries which are paid are not sufficient to keep younger men in the organization any length of time. Professional success in this country at the present time is usually measured by financial returns rather than scientific achievements. Many of these young men are not imbued with the idea that only the poor shall enter the Kingdom of Heaven, that the rich man is already damned for being rich, that poverty is in itself a virtue and riches in themselves a vice. The advancement of surgery could be greatly aided by the establishment of fellowships in the surgical department, each endowed for $50,000, which would give to the appointee a living wage and some money for books and equipment.

SURGICAL EQUIPMENT

Teaching of surgery, stimulation of investigation, and the founding of a school of surgery should be the ambition of a surgical department. What is required in the *way of surgical equipment?*

It has been stated that fifty surgical beds with a large outpatient department should be sufficient, if the classes are limited to sixty. This statement was made fifty years ago and has been repeated from time to time since. It no longer holds good. The specialties have developed at an enormous rate. Neurosurgery, urology, otolaryngology, plastic, rectal and thoracic surgery, all require beds. Gallstones, ulcers of the stomach and duodenum and hypophysial and thyroid disorders now receive surgical consideration. *Industrial surgery must also be recognized, for notwithstanding* the safety devices which have been introduced, large numbers of persons are still injured and these must be returned to industry as quickly and with as little disability as possible. Even with 150 beds, which represents the minimum capacity, the turnover must be rapid to teach students disease and to permit them to observe throughout their courses disease and injuries.

The outpatient department is and will remain an exceedingly valuable aid in teaching. In 1924, practically all the teaching of fractures at Johns Hopkins was conducted in the outpatient department. The relation between the outpatient and inpatient departments must be extremely close. The liaison between the two must be perfect. This necessitates a reorganization or readjustment of most outpatient departments. I have the profoundest sympathy for the man in the outpatient department who year after year does the drudgery with little or no financial reward, frequently without promotion or preferment. The relation between the two departments should be so close that the man in the outpatient department keeps in touch with the patient after he enters the house; he should be notified of and witness the operation if such is performed, and have the patient returned to him after discharge from the *hospital. A certain number of the 150 beds should be* reserved for men in the outpatient department who have ideas and problems on which they want to work. Such an opportunity will stimulate teaching and raise to a much higher level instruction in the outpatient department, which is often killed by dull monotony.

The surgical clinic should be a unit capable of doing all its bacteriology, pathology, chemistry and special examinations. Such an organization conserves time and enables members of the staff to be in most intimate touch with the material. It is not infrequently stated that the surgeon is more or less of a mechanic. Perhaps this criticism is more or less justified at times. The grounds for such criticism should be removed. The surgeon should be a diagnostician, a pathologist and a bacteriologist, applying largely mechanical therapy. Every man on the staff should have a special training in pathology, and some time during his residence should serve a period in the laboratory, handling tissues and teaching students. This is a large order but is the ideal toward which every surgeon should strive. It is generally believed that a high wall is raised between ideals and reality, between art and handicraft—a wall whose foundations have been well laid but which crumbles bit by bit as soon as properly trained men with purpose and determination put it to the test.

While the unit organization is the one which we hope we may obtain, it should be understood that there should be the closest cooperation with the other departments. The welfare of the institution should always be uppermost, and the fate of an institution is settled when cooperation between departments ceases to exist. *An increased bed capacity is already needed.* We are losing cases because we have no beds. It is bad business medically to turn patients constantly to other hospitals, as it is bad business commercially to refer purchasers to other stores. A channel is worn. It may be difficult to reverse or divert the stream.

PRESENT TENDENCIES AND PROBLEMS

Certain things are proposed from time to time which embarrass or interfere with the plans of those who *have to do with the teaching of medical students.* The tendency of state boards of examiners at the present time is to require a fixed inelastic curriculum which necessitates spoon feeding by instructors. The student must have taken a certain number of hours in a subject before he can appear before the examining board. In some instances different associations of medical colleges have attempted to make an ideal curriculum with the introduction of a certain number of required hours in the different subjects. On numerous occasions, I have attended meetings in which the curriculum has been discussed, and I have often wondered what impression such a discussion would make on a prospective student or a student in the first years of medicine. Each teacher seems to think that his department is of prime importance, forming the foundation of medical education, a the main difficulty seems to be to find hours enough in the day or a reasonable number of years to satisfy each department. Attendance at such a meeting readily convinces me that we think in terms of departments rather than in terms of the institution.

Difficulties are now arising as to the type of internship that a recent graduate should serve. A man may take a year in medicine, then a year in surgery, or vice versa, or he may take a year in pathology and then a year in medicine or surgery. If a student is to go into surgery, a year can be spent to great advantage in either medicine or pathology, and a man looking forward to a career in surgery should always have such a preparation. Such an internship gives the man an opportunity to do one thing well. If the habit of doing a thing well is acquired, there is no need to worry. The ordinary rotation service tends to superficiality. In certain states in which a fifth or intern year is required before the candidate can appear before the examining board, a rotating intern service is required. This is the age of standardization. All are made to run in the same groove. Individuality is suppressed in a country which prides itself on a democratic form of government The system of medical education and licensure is probably the most autocratic in the world. There is a tendency to fabricate the medical student on the plans of a Ford. In discouraging some of these tendencies, the alumni of a school can exercise a corrective and lasting influence.

There has been much discussion concerning the so-called full-time system. I have accepted two such positions and must therefore believe in it. There are, however, some dangers in it which must be avoided, if it is to serve its purpose. Even its most ardent advocates admit that at the present time it would not be desirable to place the entire staff on this basis, even if money were available to do so. I have considered this plan carefully, and at one time was requested to make a budget, having this in view. The minimum budget for a surgical department in which the entire staff was on full time was $100,000, the income from $2,000,000. It would be difficult to secure such an endowment for a single department. More money would soon be required to keep the department at maximum efficiency. In addition, money would be required to maintain free beds for such a department. To justify such an expenditure there would have to be an enormous return in productive scholarship, and exceptional surgeons and teachers would have to be developed in relatively large numbers. The most serious difficulty with the system is the possibility that those engaged in it may become cloistered and sequestered, and that private material, which not infrequently is the best material for teaching and investigation, may be reduced in amount.

No medical department or institution can divorce itself from the community in which it is located, or from the practicing profession. From time to time any institution has to indicate that it is an integral part of the community. The medical school and hospital can do this better than any other part of the university. A man may make a great contribution to electrical science or physics by which all are greatly benefited, but medical care is something more personal. The physician and surgeon are relied on when things are blackest and genuine comfort needed. In no profession that I know of are the personal relations so close as between the family and physician. If I needed a surgeon, I would think that I was entitled to the best, and I would certainly lose my interest rapidly in any institution which made it impossible for me to have the services of that man. The surgeon must control his time, but he should give the impression that he is willing to render service when called on.

I have read, as probably all of you have, Cushing's remarkable book "The Life of Sir William Osler." One cannot help being struck by the interest that he maintained in people in his community, in the members of the medical profession with whom he liked so to associate, and in medical societies. These associations were of mutual benefit. He directed the profession along better lines. He furnished the driving power so often needed, and, in turn, these organizations kept him in contact with the best and stimulated him to increased endeavor. His full life speaks more than words for the necessity of many contacts. The busy man is apt to be the productive man.

If the full-time man does not see private patients, he will lose material which may prove most valuable for teaching and investigation. In many charity hospitals, the material, while large, may be limited to definite groups of cases. It has always seemed to me that there is a greater diversity of disease among private patients, many diseases, in fact, which the graduate will see on entering practice. These patients also give the most intelligent cooperation, and are therefore most satisfactory in the investigation of disease. It has been my experience that private patients rarely, if ever, refuse to be shown in a clinic or to a small group of students. The possibility of the reduction in this material or its possible complete elimination should be seriously considered. The loss of such material might interfere materially with the education of the physician.

In the New York *Herald Tribune* there recently appeared an editorial headed "Art as a Healing Art." The first sentence of the editorial was as follows:

> When the Virchow Hospital in Berlin was erected, some one had the wit to suggest as a legend to go over the entrance, In treating the patient do not forget that he is a man

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Brewers' Yeast as Supplement to Deficient Diet.—In the course of an investigation on the influence of dietary deficiencies on experimental tuberculosis in the albino rat, it was noted by M. I. Smith and F. G. Hendrick that a diet composed of 40 per cent rolled oats (6 per cent protein) plus 10 per cent purified casein supplemented with fat soluble A and inorganic salts failed to produce normal growth, such as is obtained when the rat is maintained on a synthetic diet of from 16 to 18 per cent of purified casein supplemented with fat soluble A, inorganic salts, and vitamin B. The addition of from 5 to 6 per cent of dried brewers' yeast to the oat ration produced a normal growth curve, irrespective of whether the ration contained casein, gelatin or neither. It is clear, therefore, that dried brewers' yeast satisfactorily supplements the oat kernel. Though the oat kernel is known to contain liberal amounts of vitamin B, the possibility suggested itself that the level at which oats were fed might not furnish this vitamin in adequate amounts. To test this possibility, a quantity of dried brewers' yeast was autoclaved for six hours at 15 pounds pressure, which procedure completely destroyed its vitamin B content, and this material was fed to rats. The results demonstrate that autoclaving brewers' yeast, though destroying its vitamin B content, does not impair its efficacy in supplementing the oat deficiency. The oat kernel is therefore not deficient in vitamin B, but is deficient in some other factor, a factor that is present in brewers' yeast and withstands prolonged autoclaving. Evidence is advanced to show that a synthetic ration with casein as the sole source of protein must be supplemented with this unrecognized factor present in yeast, besides vitamin B, in order to make it adequate.—*Pub. Health Rep.* **41:**201 (Feb. 5) 1926

SAVING TIME IN THE MEDICAL SCHOOL *

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With the introduction into premedical and medical courses of those subjects requisite for a proper understanding of modern medicine, there has been a prolongation of the training period for the degree of Doctor of Medicine to a point that is approaching the upper limit of reasonable requirement.

As physics and chemistry were introduced into the premedical curriculum, and experimental physiology, laboratory bacteriology and practical pathology found their way into the day to day work of the medical school, the necessary clinical training was pushed forward. This, based on the traditional and ridiculous "four-system" of American education, meant four years of high school, four years of college, and four years of medical school. When additional training of a practical sort was added to this, the medical student before he actually met the problems of practice had passed out of the stage when it is easy to train his senses and his social accommodations.

The result of this carried to the extreme, as it has been in some of our institutions, was to develop practitioners who seemed (at least to many active practicing clinicians) comparatively ineffective and who required too much machinery for the practice of medicine.

With the two-year college requirement, four-year medical course and the one year of intern, there has been an approximation to a more reasonable period of time consumption. This has been viewed as somewhat at the expense of proper scientific and broad general training by many of those who have most carefully thought over the whole field of scientific education with medicine viewed as a portion of that field.

It has become, I think, quite clear to all that there is no possibility of making a pathologist, physiologist, anatomist, bacteriologist, biochemist and pharmacologist out of every prospective medical student, and that it is just as impossible to turn out a radiologist, urologist, rhinologist, laryngologist, otologist, orthopedist and pediatrician in the later clinical work in the medical school. It has become clear to most medical teachers that a careful selection is necessary in order to provide broad general training, sound scientific training and adequate clinical training during the period from the late teens through the early twenties in the development of physicians. Careful selection in the fundamental fields, together with the elimination of the specialties, will give sufficient training time to turn out a well rounded general practitioner, if that becomes the program of the American medical school. It seems to me, then, that the first thing is to choose the training of a general practitioner as the goal of the regular medical course, and then with great care to select the subjects that are requisite; and, second, to choose with even greater attention the methods of handling those subjects, the amount of time to be given to each of them, and to insist on practical clinical training during the period when this is most possible to the young physician.

To begin with, it is going to be necessary to eliminate so far as is possible many of the traditional absurdities of the medical curriculum, and also many of the methods, including an abnormal number of lectures, certain sequences in training, and that sort of thing. With proper coordination by the various instructors, there is no reason why there should be the endless repetition to which the present medical student is subjected, leading him to lack of interest and preventing many students from obtaining that concentration and thoroughness which will mean so much all through later life. We should strive particularly for such concentration and thoroughness, rather than assist in that diffusion and dissipation of energies which is inevitable with repetition. Why should the medical student be told the same thing a dozen times by as many instructors? Why not stop *teaching* him, and let him get most of his information for himself after one or two exposures? Less time in the lecture room and more time in the library, at the desk, at the bedside, and in the clinic, will lead to that self-training which sooner or later every practitioner must obtain. The lecture system, together with the antique examination plans now in general adoption, leads to periods of hectic work, physical and mental exhaustion, and unnecessarily long vacations.

A proper use of the calendar year with short vacations and a reasonable study list should give the medical student a life of only moderate strain, similar to that which he will experience afterward, and with better results in his training. The long summer vacation has no reasonable educational or physical excuse; there may be an economic necessity for it in the case of those students who need to assist themselves financially. The organization of the medical course on a four-quarter basis, leaving one month, say September, in the year free and with vacation periods of a week at Christmas and at Easter, it seems to me, is an ideal plan. In this way it is readily possible to do the present four-year course in three. This provides ample time for that acquaintance with the long list of terms which every medical student must know, and which is one of the most difficult problems of the student. A proper mixture of work in the outpatient clinic, laboratory, hospital and library can be so arranged that an adequate amount of training can be offered without difficulty. If an institution is so deeply embedded in its own traditional methods (as many seem to be) that it cannot free itself, it is possible for the summer vacation period to be used for clinical and laboratory assignment of one sort or another with proper credit, thus reducing calendar time consumption.

If the quarter system is used for both the college period and for the medical school, five calendar years should without difficulty give all the work that is now obtained in the two-year college course and the four-year medical course, together with a portion of the intern year. Under this system, students who need to support themselves can drop out for a quarter or more at any time, and return when their finances are rehabilitated. Graduation is possible at the end of any quarter, so that there is no needless loss in time. In other words, by these methods we can in a shorter period of time give to medical students just as good, if not better, training, with less speed, fewer spurts, less talk by the teachers, more study and self-training by the students, and with better care of the mind and body.

Is it not about time to break down the rigid honeycomb of old procedures, which is getting so thickened that we often have more wax than honey? Is it not about time to look at the training of the physician as a new problem to be achieved in new ways? If we can get some of the arteriosclerosis out of medical education we can produce better physicians in shorter time with the same facilities.

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* Read before the Annual Congress on Medical Education, Medical Licensure and Hospitals, Chicago, Feb. 16, 1926.

SELECTING A HOSPITAL FOR AN INTERNSHIP

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In recent years there has been an increased insistence on an internship in a hospital, subsequent to the completion of the course in the medical school, as a prerequisite to the practice of medicine in any form. Some states have made this a requirement for admission to examination for registration for practice. Medical schools are coming to a very general recognition of the internship as part of the plan of education of the medical student, and whether they award their degree of doctor of medicine before or after the completion of the internship, the medical curriculum is planned on the assumption that the internship will be taken to round out the student's medical course, and that, without it, he will have had an incomplete preparation to begin the practice of medicine. In other words, the internship is recognized as having a definite educational value; to be satisfactory for the student who has just completed his medical curriculum, it must have such a value.

With this requirement in view, what ways and means has the senior student for the selection of a hospital internship satisfactory to his need? In the first place, it must be recognized that a hospital may be adequate for its work in the efficient care of its patients and yet be quite unsuited for an internship that is to complete the medical school education of the student. In other words, a hospital can perfectly well be a class A institution as a hospital for the care of patients and at the same time be about class D for an educational internship. This applies particularly to special hospitals. However, the converse is not true; no hospital classed below A as a hospital can be considered a satisfactory place for an internship. In other words, no hospital in which patients do not receive excellent professional and institutional service is acceptable for an internship. The educational internship should be limited to class A hospitals, using the classification of the American Medical Association as a basis of grouping; this serves as a reasonably satisfactory index of a satisfactory care of patients, but it must be recognized that classification as an A hospital in itself does not indicate that the hospital is satisfactory for an internship.

As it is the educational value of the hospital that is the important criterion to the prospective intern, certain general conditions must be fulfilled. In the hospital, the intern should expect to learn how to apply to the individual patient the more theoretical knowledge acquired in the medical school and by repetition, with methods of check as to accuracy, perfect himself in the methods of his profession, the methods of both diagnosis and treatment, along with the acquirement of that somewhat intangible but no less important art, which, for a better term, we may call the understanding of the human relationships of patients. There must be in the hospital patients in sufficient numbers to keep the intern occupied, and yet not so many that he has insufficient time to study each one with care. The diseases of the patients must be sufficiently varied to give the opportunity to apply a major portion of the usual methods of diagnosis and treatment. The apparatus, including an adequate laboratory equipment to carry out these methods, must be available for the use of the intern.

It is the general idea, rather than the detailed form, of the foregoing that is important. Deficiency in number of patients may be offset by other features. Excess of patients may be made less of a disadvantage by highly organized methods of handling them. In general terms, in a graded internship,[1] twenty-five beds under the care of one intern during his period of responsible charge of patients may be regarded as a minium and fifty as a maximum for the educational purposes of an internship, but it should be remembered that in mere numbers there is no desideratum of desirability, and under special circumstances either less or more may provide entirely adequate educational opportunity.

The range of diseases of patients needed is rather more difficult to express in any definite or numerical way. A general medical service of the size already indicated, to which patients are admitted so as to include those likely later to need surgical therapeutics, will furnish an adequate range of diseases. A surgical service in which all the usual procedures of diagnosis are carried out will provide this range equally well. Just how far there is need in such an internship for the special services, such as pediatrics or obstetrics, is a question of considerable debate at present. It seems to me that its proper answer must hinge on what is to be the future work of the medical student and what are the opportunities within the medical school for practical work in these several branches. On these factors depend the educational value of the mixed service. This service, which on theoretical grounds is desirable, at once becomes undesirable if the period in each division is too much shortened. It has seemed to me that an internship as short as twelve months probably is inadequate in time unless it is an unmixed service in medicine for the man proposing to go ahead with a special service, and that any form of mixed service should be eighteen months in length as a minimum and longer if it includes any of the very special services. It should be noted that these are minimal lengths of service and not expressions of length of an ideal service. However, let me reiterate that it is not the form and the length but the quality of the service that is the important requirement, and it would be unfortunate for regulating bodies to attempt to express as requirements minimal or maximal numbers of beds and numbers of months of service or types of service except in the most general terms; it would be still more unfortunate to say, for example, that a mixed service alone will provide the educational opportunity to be regarded as a required part of the training of the medical student.

Hospital equipment and laboratory facilities hardly need definition in this paper. As far as they are concerned, in general, any class A hospital providing the other things discussed may be regarded as entirely adequate for the purposes of an acceptable internship. It may be added, however, that the intern must be required to do for himself the ordinary laboratory procedures of diagnosis without being expected to do the more complicated ones, which he is entirely unlikely to carry out for himself in future years as part of his own practice of medicine.

The first paragraph of this paper ended with the idea that the internship, to be satisfactory, must have a definite educational value. Herein lies the crux of the situation; all else discussed up to this point is merely machinery to an end. For "a definite educational value" there must be instruction and guidance. The men of the staff are more important than the equipment of the hospital and the number and type of patients. They must be willing to instruct the interns; they must be willing to spend time in the hospital engaged with the interns in the study of patients; they must be well trained themselves, and they must know how to teach.

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[1] In a graded internship, the intern rotates from one type of medical work to another. A frequent arrangement is for him to serve a certain number of months in clinical laboratory work, then as junior aiding the senior in charge of patients, and finally as senior. Consequently, in his period as senior in responsible charge of patients, each intern is aided by two other interns.

It is of these phases of hospital work that it is most difficult for the prospective intern to obtain information. The annual report of the hospital gives the number of beds, number of patients treated and the names of the staff members. Often the annual report gives, in the form of tables of diagnoses, an idea of the range and type of diseases encountered. If the prospective intern knows the names of the staff, the American Medical Directory will give him a little idea of the qualifications of each, such as school and date of graduation and membership in societies. This, however, is meager and may be misleading. As to time spent in the hospital by members of the staff and their teaching ability, a visit to the institution or a talk with present or recent interns will help.

Looking about for any other criteria, it has seemed to me that the number of necropsies obtained on patients dying in the hospital is perhaps the best single index of the professional efficiency of the hospital, of the amount of work devoted to the study of patients by members of the staff, of the eagerness of the staff to learn, and its teaching abilities. In my opinion the physician who has studied his patient conscientiously and has watched the progression of his disease from day to day, who has discussed the disease and its manifestations in the patient with his interns, and who is sincerely desirous of learning more of medicine is the physician who makes every effort to secure permission for necropsy in all fatal cases and is keenly interested in what is found. When such men make up the staff of any hospital necropsy permits are sought on all fatal cases and obtained on a goodly number; and hence the percentage of necropsies obtained in any hospital forms a very good index of the professional efficiency of the institution and the desirability of that hospital as a place of an internship.

In a statement published last year in the paper of the Phi Rho Sigma medical fraternity, I gave the advice that any general hospital having more than fifty deaths per annum, in which the necropsies were 25 per cent or more of the number of deaths, might be regarded as a desirable place for an internship. I now think that 100 deaths per annum is a better standard to adopt, as the smaller number of deaths would include many hospitals hardly large enough to provide thoroughly satisfactory internships. With this idea, I have arranged a number of general hospitals with 100 or more deaths a year in a series based on the percentage of necropsies to the number of deaths, the institution with the highest percentage being at the top and the one with the lowest at the bottom, as shown in the accompanying table. This list comprises the Mayo Clinic and the larger hospitals of Chicago (data for Chicago obtained through Dr. Irons from a report of the committee on necropsies in the hospitals of Chicago to the governors of the Institute of Medicine), Boston, New York, Philadelphia, and Baltimore (data for these cities obtained by letter from the individual hospitals). The data are not always of the same year, and the list is far from complete. In general the figures apply to all deaths in the hospital except such as are referred to the coroner or medicolegal examiner; medicolegal necropsies are not included. In most instances, deaths and necropsy percentage include both private and ward patients. This is the case for all hospitals having 25 per cent or more of permission necropsies, except Mount Sinai Hospital; there the assistant director states that they are unable to supply information in regard to private ward patients; letters from the other hospitals with more than 25 per cent of necropsies state that private patients are included in the figures given. Private patients are included in the statistics of all the Chicago hospitals except the Cook County Hospital. Allowing for possible variations in the method of gathering the figures from different hospitals, the table is still a reasonably fair grouping of the institutions on the basis of percentage of necropsies per annum, and I think it shows the value of this as an index of the quality of the work of the institutions, though of course there can be considerable difference of opinion as to the proper comparative ranking of individual institutions.

Percentage of Necropsies to Number of Deaths in General Hospitals with One Hundred or More Deaths a Year

Name of Hospital	Date of Statistics	Number of Deaths	Necropsy Percentage*
Mayo Clinic, Rochester, Minn.	1925	625	86+
Johns Hopkins Hospital, Baltimore	1924	683	84+
St. Agnes Hospital, Baltimore	1925	135	80
Peter Bent Brigham Hospital, Boston	1925	289	69+
Presbyterian Hospital, Chicago	1924	314	67+
Mount Sinai Hospital, New York	1925	589†	61+
Pennsylvania Hospital, Philadelphia	1925	431	50+
Michael Reese Hospital, Chicago	1924	384	40+
Presbyterian Hospital, New York	1925	299	39+
Jefferson Hospital, Philadelphia	1925	450	38+
Philadelphia General Hospital, Philadelphia	1925	2,577	37+
Lankenau Hospital, Philadelphia	1925	253	37+
New York Hospital, New York	1925	406	36+
Massachusetts Homeopathic Hospital, Boston	1925	321	35+
St. Luke's Hospital, Philadelphia	1925	435	34+
Massachusetts General Hospital, Boston	1925	431	32+
Presbyterian Hospital, Philadelphia	1925	230	32+
Illinois Central Hospital, Chicago	1924	121	31+
St. Joseph's Hospital, Chicago	1924	153	28+
St. Luke's Hospital, Chicago	1924	263	26+
Mount Sinai Hospital, Philadelphia	1925	201	25+
Lenox Hill Hospital, New York	1925	364	24+
University Hospital, Baltimore	1925	281	23+
Post-Graduate Hospital, New York	1925	415	23+
New England Deaconess Hospital, Boston	1925	114	21+
Protestant Episcopal Hospital, Philadelphia	1925	484	20+
Bellevue Hospital, New York	1925	2,824	20+
Roosevelt Hospital, New York	1925	463	19+
Lincoln Hospital, New York	1925	581	19+
Norwegian-American Hospital, Chicago	1924	162	18+
Cook County Hospital, Chicago	1924	4,024‡	17+
Swedish Covenant Hospital, Chicago	1924	151	16+
Boston City Hospital, Boston	1925	1,270	15+
Augustana Hospital, Chicago	1924	218	12+
Hebrew Hospital, Baltimore	1925	209	12+
Union Memorial Hospital, Baltimore	1925	135	12+
Harlem Hospital, New York	1925	1,186	12+
Wesley Memorial Hospital, Chicago	1924	207	12+
Hahnemann Hospital, Philadelphia	1925	491	9+
St. Mark's Hospital, New York	1925	155	9+
Grant Hospital, Chicago	1925	135	8+
Fifth Avenue Hospital, New York	1925	204	8+
American Hospital, Chicago	1924	152	8+
St. Anne's Hospital, Chicago	1924	126	6+
Mercy Hospital, Chicago	1924	242	5+
St. Vincent's Hospital, New York	1925	363	5+
Frances Willard Hospital, Chicago	1924	130	5+
Methodist Episcopal Hospital, Philadelphia	1925	246	5+
John B. Murphy Hospital, Chicago	1924	146	4+
St. Elizabeth's Hospital, Chicago	1924	209	3+
St. Mary of Nazareth Hospital, Chicago	1924	285	2+
St. Elizabeth's Hospital, Boston	1925	163	1+
Carney Hospital, Boston	1925	219	0.5+

* Percentage on which permission for necropsy was obtained.

† Private wards not included, as the hospital administration does not have information with regard to necropsies on private patients. Without these, the comparative ranking for this hospital probably is too high.

‡ Charity wards only.

While there may be exceptions as to hospitals with smaller percentage of necropsies, I know of no exceptions as to desirability when the percentage is 25 or higher, and in general the higher the percentage of necropsies, the more suitable is the hospital for an internship. In my judgment, the hospital that has few necropsies is a hospital in which the staff lacks many qualities that go to make up the best type of medical man; often the staff lacks the courage to have a showdown of its diagnostic ability, a form of cowardice hardly consistent with the highest ethics and a real desire for progress. Most important is the fact that, without necropsies, the physician in charge of the case fails to realize his diagnostic deficiencies; he probably has ceased to progress in his medical knowledge and may even have retrogressed. There can be no poorer leader and teacher than he who no longer recognizes his limitations.

In giving 25 per cent of fatal cases coming to necropsy as a criterion of desirability of a hospital for an internship, I believe a very serviceable criterion of efficiency has been set, and hospitals should strive to maintain this level as a means of valuable postgraduate education for their staff as well as for their interns. Why should not this standard be set by the American Medical Association as an additional criterion of acceptability for an internship?

It is not amiss, perhaps, to point out that in hospitals with numerous Jewish patients there is encountered constantly the excuse that the Jewish religion has tenets opposed to the necropsy; certainly, that has been our experience in Boston. In the *American Israelite* for Nov. 19, 1925, will be found a full discussion of this topic, based on a study of the Talmud and rabbinic opinion, which it would be well for all Jewish physicians to read. From this, it seems clear that there is no authority or tenet of the Jewish faith opposed to the necropsy. Yet in a list of twenty Jewish hospitals, in 1923, there were only five in which the percentage of necropsies obtained on Jewish patients exceeded 25 per cent of the deaths, and in seven there were no necropsies at all. An active campaign of education on the part of Jewish physicians among Jewish people would do much to correct this situation. In other sectarian hospitals conditions are very similar, and many nonsectarian hospitals are no better. If my criterion of desirability of a hospital for an internship should receive general acceptance by the senior students of the better medical schools of the land, these hospitals with few necropsies would soon find themselves having great difficulty in securing good interns. It would seem to me that, if hospitals with a poor record in regard to necropsies expect to attract high grade men as interns, they should make strenuous efforts to increase the number of necropsies obtained on patients dying within or soon after discharge from the hospital. I may add that whenever such an effort is made, a goodly number of necropsy permissions is the result.

Some hospitals pay interns a stipend of some form. This should arouse in the mind of the prospective intern a strong suspicion of the inadequacy in educational value of the internship. I do not mean by this that there is anything reprehensible in payments to an intern; but knowing as I do the efforts at economy required on the part of all hospitals, I know that they do not pay salaries for service obtainable without salary, and that payment of salary is an indication that they do not offer enough of educational value in their internship to attract interns, and so they must add a monetary attraction in order to get them. The student without means may be forced to take a salaried internship, but he should realize that he is probably getting one of a depreciated educational value. It has always seemed to me that the salaried hospital resident job should be taken by the man who has completed his medical curriculum, which today means the completion of a medical school course of study plus an internship. To me there seems no more occasion to pay a salary in an educational internship than to pay a salary to the medical student during his course in the medical school.

Perhaps many of my views will meet with disapproval. They are merely the opinions of one who is greatly interested in the hospital training of interns. If they stir up a discussion that will enhance the educational value of the internship in this country, they will have accomplished all that I can ask for them. Whether my suggestions prevail or not is of little importance, provided their intent is attained—a better internship available to every graduate from our medical schools.

MEDICAL EDUCATION AND MEDICAL SERVICE

SOME FURTHER FACTS AND CONSIDERATIONS

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I have presented in previous papers[1] a large amount of evidence of difficulty and breakdowns of medical service, especially in rural districts. Rural medical service, however, has not generally broken down and when attention is called to the actual shortage in some locations, and the impending shortage everywhere, it is often assumed that a sufficient answer is that there are plenty of doctors in the country. Assuming that this is true, the serious fact is that the rural doctors are disappearing.

THE AVERAGE AGE OF RURAL PHYSICIANS

The conclusive evidence of this is the high average age of rural physicians. Several men in various parts of the country have called attention to this fact in their respective states. Following this hint I have in the last six months undertaken to investigate the age of rural physicians throughout the United States. The investigation was conducted as follows:

I wrote to the secretary of each state medical society the following letter:

> I wish to send a request, asking the names and locations of all of the physicians in his county, to a representative physician, who would probably give me a careful answer, in each of several rural counties of your state.
>
> Would you do me the favor to give the names of ten to fifteen such men with their addresses in various counties of the state which would be fairly representative of conditions of rural medical service. For my purpose I regard counties that have no town above 5,000 as rural.

In states with few counties, a smaller number was asked for.

It should be noted that I asked for counties which would be fairly representative of conditions of rural medical service, not those where service was worst.

Also it should be noted that I have assumed as a standard of rural communities counties that have no town of more than 5,000 inhabitants, while the census standard of rural communities is one having a population of 2,500 or less.

I received replies from forty-one of the forty-eight secretaries. The forty-one states heard from are shown in the accompanying table.

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[1] Pusey, W. A.: Medical Education and Medical Service, J. A. M. A. 84:281 (Jan. 24), 592 (Feb. 21) 1925.

I then addressed to the physicians in each state suggested by the state secretary a letter asking the names and locations of all the physicians in his county.

This letter was sent to 366 doctors in 366 counties in the United States, and replies were received from 283 counties in forty-one states (77.3 per cent).

My investigation thus covers 283 counties in forty-one states; i. e., 6.9 counties per state. Some states show a return from a few counties because they have few counties or few rural counties. Taken as a whole, I think one could hardly get a more accurate cross-section of medical service in average rural counties in the United States.

These returns from each county reporting were then checked with the latest directory of the American Medical Association. The age of each physician and the number of years he had been in practice were also determined from the directory. All of the statistical work was done by my secretary, Mr. J. Q. Gowland, an experienced statistician.

Results of Investigation

State	No. of Counties Examined	Total Number of Doctors	No. of Graduates Last 10 Yrs.	Counties no graduates Last 10 Yrs.	Average Age	Average Time Practicing	High Age	Low Age
Alabama.......	7	92	8	2	51.3	25.7	56.9	45
Arizona.........	5	49	4	3	51.9	25.1	56.4	50.4
Arkansas.......	7	113	3	5	54	24	59	52
California......	12	156	18	4	52	24.3	61.7	46.1
Colorado.......	6	104	9	1	51.7	24	53.5	47.7
Connecticut....	4	89	7	..	53	27	54.8	51.4
Delaware.......	1	32	2	..	57.2	29	....	....
Florida.........	6	53	4	3	47.6.	20.5	58.5	43.5
Georgia.........	6	70	7	2	51.8	24	53.6	45.7
Illinois..........	7	208	25	1	52.4	24.7	57	48.6
Indiana.........	8	134	9	3	53.7	25.5	61.9	49.7
Iowa............	8	143	13	3	53	25.7	59.7	49.3
Kansas.........	5	39	7	1	51.9	24.7	54.4	49.2
Kentucky.......	6	89	1 (col.)	5	56.2	29.8	59.3	54.8
Louisiana......	9	160	13	1	50.5	25.3	53.7	48.5
Maine..........	4	115	18	..	53	25.8	59.5	50.2
Maryland.......	6	128	8	2	53.8	28.2	55.4	47.2
Michigan.......	6	71	9	1	52.7	25.1	55.2	47.2
Minnesota......	9	87	13	1	48.9	21.6	56.3	43.2
Mississippi.....	6	95	6	2	51.8	24.6	55.4	47.9
Missouri........	11	135	6	5	55.7	29	61.3	51.7
Montana.......	3	20	0	3	51	23.2	52.9	46.2
Nebraska.......	5	80	13	1	48.8	22.2	50.4	45
Nevada.........	5	31	1	4	53	24	57.7	44.7
New Jersey.....	7	186	18	1	52.8	28	60.5	48
New Hampshire	3	90	11	..	52.9	26.4	55.8	50
New Mexico.....	5	33	0	5	56	27	61.6	52
New York.......	7	237	25	1	53	26.4	58.4	48
North Carolina	6	67	12	2	47.6	20.1	50.3	42.5
Ohio............	9	174	13	2	54.6	29	59	53
Oregon.........	10	96	13	5	48.8	21.2	57.7	46.8
Pennsylvania...	18	403	25	5	54.1	27.6	58	48.4
South Carolina	7	106	12	2	50.1	24.2	53.4	44.4
South Dakota..	6	32	5	3	47.8	19.2	51	43.7
Tennessee.......	9	183	5	4	54.9	27.9	59	49.3
Texas...........	6	87	7	3	53.8	27.6	59.2	51.2
Utah............	5	35	11	3	46	17.6	50.1	43
Virginia........	11	123	7	5	50.9	25.3	58.5	45.9
West Virginia..	6	57	3	5	54.4	26.6	57	48
Wisconsin......	11	153	23	..	49.5	22.5	53.5	44
Wyoming.......	5	38	5	1	48.8	22.1	54.5	45.3
Total.........	283	...	398	100				
Average age....................................					52 yrs.			
Average time practicing..................................						26 yrs.		

It is fair to call attention to the fact that this information is at least a year old now and that all the figures of ages would practically be one year higher at the present time.

As far as possible, physicians who had retired from practice on account of age or other causes were omitted.

The table given herewith shows in detail the results of this investigation. The outstanding facts of it are as follows:

The average age of physicians in 283 rural counties in forty-one states in the United States is 52 years.

The average time in practice is twenty-six years.

In these 283 counties there are only 398 physicians who are graduates of the last ten years; i. e., 1.4 physicians to the county.

In 100 of these 283 counties (35 per cent), no graduate of the last ten years has gone into practice.

The significant broad facts are that in 283 representative rural counties all over the United States the average age is 52 years, and only 1.4 graduates of the last ten years have settled in each of these counties.

This, it may be confidently assumed, represents the age situation of the men who are furnishing the medical service to the rural population of the United States. The life expectancy of men of average health of 52 years is not much more than ten years (the life expectancy of selected insurance risks of 52 years is only 19.4 years). Certainly their average expectancy of service can hardly be ten years. This means that by 1935, if the present conditions are continued, there will be an utter breakdown of rural medical service.

The findings as respects graduates of the last ten years are *even more significant*. Of such graduates, 398 have settled in 283 counties. That is 1.4 to the county. If they should continue to go to these counties during the next ten years at the rate at which they have *gone during the last ten years, if none of them die* and none of them remove or discontinue practice, the total number of doctors in these counties will be 796, or 2.8 doctors to the county. There is now a total of 4,410 doctors in these 283 counties, or 15.5 per county.

Not a single doctor of the last ten years has gone into 100 of these counties. That means that 39 per cent of rural counties are facing a breakdown of medical service.

There will undoubtedly be an effort to minimize the significance of this high average age finding, but it cannot be successfully done. A large group of men averaging 52 years old is approaching the end of its usefulness. The findings cannot be minimized on the ground that they are not comprehensive. They are not figures based on a few unfavorable counties. Care was taken to select representative counties. They cover the entire United States and represent a study of the ages of 4,410 rural physicians. No more can the findings in regard to graduates of the last ten years, in these districts, be minimized. One and four-tenths doctors for each of 283 counties in forty-one states is a record of failure to supply adequate rural medical service.

The evidence brought out in this investigation is exactly in line with that brought out in my previous investigations, with that of the Committee on Medical Service of the Conference of State and Provincial Health Authorities, in 1923, to which I referred in detail in my previous papers, and with the other evidence which has been produced by many other students of the subject.

All of this evidence leaves cold *most of those who* are interested *in medical education* as such. They repeat in one form or another the statements that it is social and economic conditions that will have to be changed; that new arrangements will have to be made to supply many places with doctors—actually meaning, with the sort of doctors we are now *producing*—ignoring the fact that these same places formerly were able to have doctors.

OUR SUGGESTIONS FOR RELIEF

More and more we are suggesting state medicine or the socialization of medicine in one form or another as the solution of the difficulties. This is the suggestion of Mayer and Harrison of the General Education Board. Dr. E. P. Lyons, dean of the medical department of the University of Minnesota, at the Conference on Medical Education, 1925, said in substance, "Suppose we do get socialization of medicine, what of it? I am a state employee and I find that status satisfactory." One of the great objections to socialism is that employees find the status satisfactory. The socialization of medicine would mean that the medical profession would be in the position of the public school teachers.

Our policy is also recognized in many quarters as leading to the disappearance of the general practitioner. Sometimes his disappearance is advocated. Dr. James B. Herrick recently has taken the position that the general practitioner is to disappear and should disappear.

The vague hope that quiets most men who are concerned about the situation is that we are actually producing enough doctors and perhaps some day they will be crowded out of the cities and specialties into practice where they are needed. Even if we are producing enough doctors, I believe that consideration will show—as I have attempted to show—that the crowding-out theory will not be effective in helping distribution to any practical extent.

ARE WE PRODUCING ENOUGH DOCTORS?

But are we producing enough doctors to hope for any action from this crowding out theory? Until recently I have accepted the contention as correct that we were producing all the doctors that were needed, that the difficulty was one of distribution. Recently doubts on this point have arisen in my mind. Particularly facts called to my attention by F. C. Waite, professor of histology and embryology at Western Reserve University have raised this question. The chief disconcerting fact which has come to my attention arises from an analysis of the Ohio situation, on the basis of Professor Waite's study of it.

After surveying the needs of the Cleveland district—that is, the district within 100 miles of Cleveland—Professor Waite estimates that that district will need 222 physicians annually to maintain the present ratio of physicians to population, without making any allowance for retirement before death. The present ratio of physicians to population in this area is 1 to 700+.[2] Western Reserve is graduating annually less than forty physicians. About 72 per cent of these, say thirty men, settle in the Cleveland district. That is, Western Reserve is furnishing the Cleveland district thirty physicians annually, when the annual needs of the district are 222 physicians. Where are the 190 to come from? Ohio has two other class A schools, one in Columbus and one in Cincinnati. These graduated, in 1925, 154 men. It also has a class B school in Cincinnati, an eclectic school, which graduated thirty-eight. Including these eclectic class B graduates, the total number of graduates, except those of Western Reserve, which we have already provided for in this estimate, amounted to 192. That is, if Professor Waite's estimate is correct, the Ohio schools are now graduating just enough men, including sectarian graduates, to take care of the Cleveland district! That district contains 51 per cent of the population of the state, and 38.43 per cent of the total area. If this estimate is correct, the Ohio schools then are graduating from all of their schools only half the number of physicians that the state needs annually. If all of the graduates of the state went to this Cleveland area, it would only take care of its needs, and leave 48 per cent of the population and 61 per cent of the area of the state unprovided for.

THE ACTUAL NUMBER OF PRODUCING SCHOOLS

I would call attention to the fact that the actual number of producing schools is less than a casual reader is apt to discover. The schools have been reduced from 160 to eighty, but of these eighty schools we have only seventy that are producing physicians. Ten of the eighty are class B schools; that leaves only seventy schools that we regard as satisfactory. But of these, and this is the pertinent fact new to me, ten of them—all class A schools—conduct only the first two years of instruction. (Next year this number will be reduced to nine.) They are only part medical schools and they do not produce a single graduate. In other words, from 160 medical schools we are now reduced to seventy producing medical schools of all sorts—44 per cent of our former number—and only sixty class A producing schools.

Also the number of students which these schools will take has been often sharply restricted to far below their former number.

When one considers this fact and remembers that we have only 44 per cent of the producing schools that we had twenty years ago, with a population of 115 millions against about 85 millions then, he finds explanation for the inadequacy of the medical schools of the country to take care of their applicants.

And yet Ohio is one of the richest and most prosperous states and one of the best supplied with medical schools. It has four medical schools, three of them outstanding schools. There are only five other states that have as many as four (Illinois, five; Massachusetts, five; Missouri, six; New York, nine; Pennsylvania, six). To meet the needs of the United States, the Ohio schools should not only be supplying all of the doctors necessary for the state, but a very considerable surplus for those states which have inadequate resources in medical education, and particularly for those twenty states which have no medical schools and which must look to outside medical schools to supply all of their physicians. The Ohio situation distinctly raises the serious question whether we are actually, as we confidently assume, producing the necessary number of graduates to supply the needs of the United States.

Also, the report of May 11, 1925, of the Committee to Visit the Medical School to the Board of Overseers of Harvard College seems to sense the same situation in New England, for it says: "It has been estimated that at least 200 young practicing physicians should come each year from the leading medical educational center of New England to supply the annual loss of doctors in this part of the country. It does not appear that the Harvard medical school is furnishing its full share of the needed quota."

THE FAILURE OF SCHOOLS TO TAKE CARE OF APPLICANTS

The Council on Medical Education and Hospitals indicates that this demand is more apparent than real, on the ground that many students make applications to several schools. It further shows that the present schools have a potential capacity of 5,000 more students than their present scheduled capacity, although why the schools do not utilize this potential capacity I have not seen explained. It further emphasizes that last year, for example, there were actually 1,500 less students in the class A schools than might have been accommodated. The fact that 1,500 more students could have been accommodated, if they had known where to go and had gotten there in time, does not cover the situation. Vacancies are not discovered until too late for prospective students to avail themselves of them. Further, it presumes a freedom of movement on the part of medical students which only men in unusually prosperous conditions possess. A vacancy in a medical school in South Carolina or Texas may not help the situation for a boy in Maine or Oregon, particularly if he cannot learn of it until too late to go there.

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[2] Population, 1920, 2,975,045; number of physicians, 1923, 4,176 (Waite's letter).

Information of the overwhelming number of applicants for admission to medical schools comes from all over the country, and an illuminating illustration of the situation was recited to me by an official of the American Medical Association, in September, 1925, who was called on, the day before, by a young man who appealed to him for aid in finding a satisfactory medical school to which he could gain admission. There was absolutely nothing wrong with the young man's case. He had credentials showing first class credits for all of the premedical course from a first class premedical school. His preliminary education lacked nothing. He had an overabundance of the best sort of credentials from his teachers and from others testifying to his ability and scholarship and his general fitness. In short, no one had raised, or could raise, any question as to his being able to meet the formal and the essential requirements for admission to medical school—and yet he presented to my informant, who examined them, thirty-eight letters from thirty-eight different medical schools to which he had applied for admission and given his credentials, each of which stated that it was full and could not take him! This young man could go anywhere to medical school and had a strong desire to study medicine. His mission was to get suggestions of other good medical schools to which he could apply for entrance. My informant was not able to tell him, and could only refer him to the secretary of the Council on Medical Education and Hospitals. The only information, I was informed, that the secretary of the Council on Medical Education and Hospitals was able to give him was that last year there were 1,500 vacancies after the schools got going. But the young man was left in complete uncertainty as to where he could find entrance.

Of course, one reason for this is that the schools are giving preference to men who present credentials above those that are required. A doctor of philosophy will get preference over a master of arts, a master of arts over a bachelor of science; so that a man who has the actual scheduled requirements has fourth or fifth chance. Sixty-two per cent of the graduates last year of the regular schools had college degrees.

It is no exaggeration to say that there is as much demand for admission to medical schools now as there is for admission to some fashionable school for rich girls or for season tickets for fashionable symphony orchestras. And, as Sir James MacKenzie[3] has said on this situation: "If, in any sphere of life, a few individuals [and he is talking about medical teachers] are set apart and given power over their fellows, it is but human that such a select body will seek to aggrandize their position at the expense of their fellows. . . . In medicine, the teachers have practically taken into their own hands the guidance of education and all the intellectual interests of the profession, and ordain the course a man must follow who wants to become a doctor." If, in the last sentence, for the word "teachers" we substitute "educators"—lay and medical —and a relatively small number of them—this statement of MacKenzie's applies exactly to the situation now in the United States.

DENIAL OF THE EFFECT OF HIGH COST IN RESTRICTING DISTRIBUTION

There is a widespread tendency among those interested in the status quo to deny the effect of the high cost of medical education on the distribution of physicians or in the expensiveness of medical service. It is generally accepted by others. That principle applies to every commodity. We can give concrete illustration of its perfectly obvious action even in education. For example: A survey of earnings of the Massachusetts Department of Labor makes the following estimates:

> A man with a grammar school education earns about $45,000 between the ages of 14 and 60.
>
> A high school graduate earns about $78,000, 51 per cent more, between the ages of 18 and 60.
>
> A college or technical school graduate earns about $150,000, 233 per cent more than the grammar school graduate and 92 per cent more than the high school graduate, between the ages of 22 and 60.

In other words, as these men increase the extent of their education—that is, its cost in time and money—they are able to increase the price which they ask and get for their services.

We cannot deny the great effect of cost of medical education in influencing the distribution of physicians or the cost of their service and maintain our standing as logical reasoners.

NECESSITY OF GETTING MEDICAL STUDENTS FROM THE COUNTRY

We are oblivious to social facts in trying to devise some plan to get our graduates *to go to* the country. That is impossible with city graduates. Our real problem is to devise a plan whereby we can get students to *come from* the country. They are the ones from whom the rural practitioner must be recruited. The country lawyer, the country teacher, the country banker and business man, as the country doctor, do not *go* from the cities; they *come* from the country. And unless we succeed in devising some exotic substitute which the country will accept, we shall have to devise some plan whereby the country doctor can be developed from the country boy.

May I stop long enough to say that I have no respect for the argument which is constantly bobbing up in one form or another that the educated physician cannot be content with country life, or, if honest, satisfied with the services that he can give his patients there. I am quite willing to admit that many people, who have become addicted to the accessories of city life, think the country is intolerable. I, however, do not believe that this condition of mind is an evidence either of superior intelligence or of uncompromising honesty of ideals. I have no respect whatever for the Broadway attitude toward the country which we are assuming in the medical profession. On the contrary, I think there is very little difference, on the whole, between Broadway and Main Street, except that on Broadway you can conceal your defects better. Ambitions that seek the larger urban careers are often no sounder and are no greater evidence of intelligence, or more successful in their fruition, than are those that accept the simpler and often more satisfactory rewards of rural life. Coming down to our own profession: the city physicians—the rank and file of them, whether specialists or not—do not have more satisfactory, more intellectual or better rewarded careers than do their country colleagues. These statements are not talking to the gallery, and they are not due to any fanciful glamour that I have about the country doctor. They are based on a considerable knowledge of country doctors and an intimate knowledge of the realities of life of city doctors. I should not here consume time with this but for the fact that a great deal of this sort of thing is being uttered, particularly about the intellectual barrenness of life in the country; and it has weight both in our councils and in its effect on our young men.

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[3] Mackenzie, James: The Future of Medicine, p. 219.

The country physician can handle 80 or 90 per cent of his practice with self-respect; his city brother can do no more. And as for the intellectual barrenness of country practice, the resourcefulness that it calls for, the responsibilities that it demands, the problems that must be tackled, furnish to an intelligent man a sort of stimulation that is satisfying and that brings out the best that there is in him. What E. J. Swift says of nations may very well be said of individuals: "The best period of a people . . . is their years of struggle, struggle against nature and against human adversaries." But there is no use talking this to the ordinary city bred man, and there is no hope of getting the rural work done by the seven year college men, men that President Nicholas Murray Butler aptly calls "the country club type" that we are turning out. I do not say this in disparagement of them. I am simply emphasizing the fact that that sort of men will not do the world's work.

If we can produce doctors only under such a seven year course as we are now insisting on, well and good. If that is necessary, it must be done. But in doing this we must make up our minds, and not try to escape the fact, that, as a result of our policy, we must forego medical service for the people of the country of the sort that they have had heretofore. It cannot be given.

THE EUROPEANIZING OF MEDICAL SERVICE

Our present policy in medical education is directed to the Europeanizing of medical service. I picked up the *British Medical Journal* of Nov. 14, 1925, and my eye fell on a report of a recent conference in London on the place of the midwife in the maternity service. I find the first sentences in the opening of the discussion as follows: "Dr. J. S. Fairbairn in an opening paper urged that there need be no rivalry between the general practitioner and the midwife. Their functions were not competititve but complementary. *The sphere of the midwife was attendance upon normal labor, and that of the practitioner was the general supervision of the antenatal and postnatal conditions and attendance on difficult labor.*" [Italics mine, W. A. P.] · That is what we are heading for in medical service now. Obstetrics is a function of midwives, except in abnormal cases! On the one hand, we make labor a specialist's job and a hospital proposition for the fortunate; and, on the other, we are rapidly bringing about a situation—already widespread in this country—where for the rest of the mothers it shall go to midwives! And how useful will the practitioner finally become whose experience in obstetrics is confined to abnormal cases?

It is not best for the medical profession nor best for the people of this country that, barring the fortunate few, medical service for the common man should be turned over to midwives and to nurses, and to other substitutes for the doctor that we are advocating, all of whom have had flagrantly inadequate training in comparison with anything that I am advocating; and to cultists.

THE RELATIVE COMPETENCE OF AMERICAN PHYSICIANS

And I am more opposed to the Europeanizing of medical service because I believe the failure of individual European medical service for the ordinary sick is not compensated for by the superiority of skill in caring for them of European physicians. I think, as a matter of fact, that European physicians in their surgical and other therapeutic skill—and I am willing to add in professional or other ideals—do not exceed the corresponding men that we have produced. I have no smug feeling that American medicine should be content to indulge in self-approbation—we have been no better than we should be—but no more have I any respect for the feeling that it should look with unalloyed admiration on Europe. Particularly is this true when it comes to the department of caring for the sick. And in research: I am conscious of the extraordinary opportunity for the pursuit of medical research which developed in central Europe under the effective control of autocratic government; but even in leading the way in research of which it is constantly implied we must look to continental Europe for our models—even in leading the way our showing will bear fair comparison: Gorgas, Reed, Weir Mitchell, Leidy, Marion Sims, Morton, the dentist, produced under conditions of education worse than ours, Beaumont, McDowell—these are not names that suffer by comparison with any list of any country. I should be entirely content to see American medicine continue to develop along the lines of American genius.

QUALITY OF OUR STUDENTS

One of the assumptions that we make is that we are getting a better quality of medical students now than heretofore. That is probably a gratuitous assumption. In it we make the fundamental mistake of considering education the equivalent of intelligence. It is, of course, nothing of the sort. We are getting young men of more education, but this fact is offset by our limitation in choice to those of fortunate material position. We are excluding an immense number of boys of high intelligence and boys who are trained to effort, to responsibility, to self-denial and the overcoming of hardships and whose natural intellectual strength is better for this training. As a matter of fact, it is probable that the quality of medical students today is no better than it was formerly. For example: Dr. B. C. H. Harvey,[4] professor of anatomy at the University of Chicago, who is in a position to appraise the quality of students we are getting now, and who has been studying this question, says:

> Comparisons indicate that there has been improvement in the last ten years in the general and special knowledge which students bring to professional schools, but that there probably has been no increase in intellectual power and none in the character of the students.

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[4] Harvey, B. C. H.: Science, June 21, 1924.

EFFECT OF THE EXPENSIVENESS OF MEDICAL EDUCATION ON THE SCHOOLS AND ON THE STUDENTS

In the problem we are considering, the question of the expense of medical education to the student is little more important than that of its expensiveness to the institution giving it. In the last twenty years, medical education has for the first time become the favorite of philanthropy and has had unlimited amounts of money placed at its disposal. This has been due in part to the influence of the great foundations—specifically the Rockefeller and the Carnegie foundations. With the institutions they have endowed as the examples, the rest, with the pressure we have been able to bring to bear on them, have had to follow suit or lose caste. I have no disposition to question the motives of these foundations —I have unfeigned admiration for them—but I think the question may fairly be raised whether their course has been an influence altogether for good in our policy of medical education.

The chief spokesman on medical education, first for the Carnegie Foundation and then for the Rockefeller Foundation, has been Mr. Abraham Flexner. Mr. Flexner's ideals in medical education are exemplified in Johns Hospkins Medical School and in the German universities, of which Johns Hopkins has been our nearest exemplar. And with the enormous funds which have been behind the policies that Mr. Flexner advocated—and with the good qualities of those policies—the policies of the foundations in medical education have become the policies of American medicine. The result is we have set up standards for medical schools which can be actually reached only by a few institutions. It is apparently the policy of the General Education Board to establish a few medical schools in strategic locations which shall exemplify its ideas of medical education. We need a few such institutions; but we need many more, not ineffective and often weak imitations of these, but less ambitious schools devoted to the sound preparation of physicians for the everyday work of medicine. One trouble is that every school wants to be high-brow. Nobody wants to do the ordinary useful service. We see the same human trait in practice. We had it well illustrated in the venereal and genito-urinary service in the army during the Great War. We had no trouble in getting men who wanted and were able to do major genito-urinary surgery—of which we had little to do—but nobody wanted to treat the common venereal infections; and we found it impossible to get enough willing competent men to do this vastly abundant and important work.

The report of the Committee to Visit the Harvard Medical School (1925) estimates that "the Harvard medical school takes annually from the community, including the yearly expenditures and the interest on the school plant, but excluding that of the adjacent hospitals, the amount of a million dollars." Harvard has approximately 500 students in its medical school. It is then costing Harvard approximately $2,000 a year to teach each medical student, or $8,000 to produce a graduate, if every student graduates.

Or take, again, the new Vanderbilt medical school: It represents in buildings and endowments over $8,000,000. This means in interest alone an overhead of $400,000 a year. Its capacity is 200 students.[5] That means that each student will cost the institution $2,000 a year for his education.

Bevan[6] estimates the cost of the development of a medical school plant at from $1,500,000 to $3,000,000, exclusive of 10 to 20 acres of land in a large city! His estimate of the annual cost of conducting a first class medical school is from $165,000 to $350,000, which he estimates to mean an endowment of $3,500,000 to $7,000,000, a total for buildings, exclusive of grounds, and for maintenance of from $4,800,000 to $10,000,000, "and this is without charging to the medical school the cost of building and maintaining hospitals and dispensaries, or conducting the clinical departments on the so-called full-time clinical basis."

This is making medical education prohibitive to educational institutions as well as to students.

It is costing society from $5,000 to $10,000 to produce each of its doctors, and the doctors an aqual amount more.

The General Education Board[7] assumes that a college needs $250 annually per student—i. e., the graduate costs $1,000; and less than 8 per cent of the students are in college thus circumstanced. Medicine is four or five times as expensive, and 100 per cent of the schools are supposed to have the necessary income for their proper support.

Of course the expensiveness of medical education now is chiefly due to some of the policies which we are urging or requiring. Among these are:

1. The emphasis on the importance of the full-time professor, usually in a very strict sense.
2. The emphasis on research rather than on teaching.
3. The selection of teachers on the basis of research rather than teaching.
4. The urging of the teaching and research hospital.

The responsibility for these lie largely with the foundations and with their small group of advisers in medical education. The foundations have not, I am sure, tried to force their influence on us. On the contrary, they have tried to avoid this very thing. Some of their chiefs have spoken against the danger of some of these policies, as, for example, the policy of undertaking to produce investigators rather than practitioners. Nevertheless, these policies have represented their attitude as expressed by their usual spokesmen and by the schools which they have chiefly endowed; and the weight of the foundations is so enormous, because of the potential endowments from them which expectant schools see, that the evidence of their preference for these policies has had more influence than the most insistent advocacy in other quarters could have exerted.

It is further true that many of the chief spokesmen on educational policies in our councils have not viewed the situation with a background of wide experience in the practice of medicine or, sometimes, even in teaching. This situation has been exaggerated by the full-time teachers. They are apt to speak purely from the academic standpoint. They are interested in medical education as such; its practical application in medicine may be a matter of small concern with them; sometimes actually of disdain. It is not true that they have not contributed valuably to medical education, but the danger of it is that these groups are more interested in education itself than in its product. Their ideal is the "university of applied biology," as the Harvard committee calls the Harvard Medical School.

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[5] Robinson, G. C.: The Relation of Medical Education to the Medical Plant, J. A. M. A. 81:321 (July 28) 1923.

[6] Bevan, A. D.: The Organization of the University Medical School, J. A. M. A. 86:591 (Feb. 27) 1926.

[7] Report, 1924-1925, p. 5.

CRITICISMS ON OUR EDUCATIONAL POLICY

All of these policies are not only open to criticism on account of their expensiveness, but to close scrutiny as to their pedagogical soundness.

The full-time professor policy is the object of widespread criticism, and I shall devote few words to it, beyond saying that I am skeptical about it. I should be willing not only to see the clinical work done by part-time men, but the fundamental work as well. We seem to be more sensitive in medicine about this than is science in general, for it is the constant experience to see professors in other fields than medicine actively engaged outside their academic positions. One of the most brilliant investigators in American science, the holder of a chair of pure science in one of our greatest universities, told me in recent years that there had never been a year since he held a professorship when he had not earned more than his university salary in business, plain ordinary business.

Research *and education are not the same thing.* Overemphasis on research is overloading medical education. The undergraduate student is not, except in very rare instances, prepared for research or likely to benefit by the attempt, and very often no more is the man, who may be an excellent teacher, suited for it. As James Harvey Robinson says, "The sustained and arduous scientific work which has gradually built up our fund of knowledge is a pursuit for the few." Research also is not the criterion on which to select undergraduate teachers. Teaching is a function calling for definite capacity, and investigators may have little of it.

J. B. S. Haldane,[8] reader in biologic chemistry at Cambridge, says on this point:

> A great discoverer can generally expound his own work, but he may be a thoroughly bad elementary lecturer and an extremely incompetent administrator of a laboratory. It would be an advantage to education as well as to research if these duties could be more often separated.

And, as Robinson [9] says again, "In the enterprise of rehumanizing knowledge it is necessary first to recognize that specialization, so essential in research, is putting us on the wrong track in education."

The upshot of it all is that in our worship of research we are not only making the expense of medical education prohibitive, but we are on the wrong track in undergraduate education.

Suppose we returned to the policy of education for its own ends—to the position where the students got this impression: "Your business here is to equip yourselves for the practice of medicine, on the basis of existing knowledge"; suppose, then, we picked our men carefully on the basis of fitness and quickly got rid of those who showed we had made a mistake in their selection; suppose, then, we gave them three academic years of nine months of sound education in two and one-half calendar years; and then suppose we put them in good apprenticeships in hospitals for at least eighteen months, where they would learn the practice of caring for the sick by actually doing it under experienced men. Can any one doubt that we would make well prepared doctors in that way? That is about the way nearly all the best physicians in this country have been educated. The question is whether we shall turn out well grounded, soundly trained physicians, or, for the most part, weak imitations of Ph.D.'s.

Such a course provides for adequate clinical training —the essential things of all others. The laboratory is all right, but the elementary laboratory training a student needs to become familiar with laboratory methods in science and with the simple technic he needs in practice is easy, compared with a clinical training; but it cannot be substituted for it. Sir James MacKenzie has considered this subject in the chapter on medical education in his book "The Future of Medicine," and has sharply criticized present American medical education on this score.

This is the great defect, constantly criticized by clinicians, in our present type of research graduates; they are dependent on the laboratory. They do not know clinical methods or appreciate their importance. That does not make independent, useful practitioners. The resourceful man has his equipment under his hat and in his hand, and he gets it, not in the laboratory, but in clinical experience.

Suggestions such as I am making have the approval of a very large part of the profession, including many of the ablest men in it, but the opponents of them think it is a sufficient answer to say the suggestions are to give a superficial and inferior education—poor doctors for poor people. The attitude of a good many is well characterized by Robinson [10] when he says, "Those professionally engaged in the business of education are wont, as Vablen puts it, to indulge themselves in 'truculent quietism.' This permits of free expression of discontent without threatening comfortable habits."

Charges of superficiality and unsoundness cannot be made to hold against such an education as I have outlined, provided it is sincerely and soundly carried out. A less extensive education, thoroughly well grounded, would be better than the excessive amount of detail we are trying to cram into four academic years; that is unsound education. Let me quote on this point some thinkers on education of the highest rank:

Sir James MacKenzie says:

> It is far better to understand a few matters thoroughly than to have a superficial knowledge of a great many things.

Professor Robinson,[11] who, let me remind you, is the author of the "Mind in the Making" and the "Humanizing of Knowledge," one of them certainly an epochal book, says again:

> It is amusing to note the many things which college instructors and writers of textbooks include in their lectures and manuals which they themselves would not be able to recollect between times.

And as that other great educator, E. J. Swift, professor of psychology and education in Washington University, puts it:

> In science, conclusions and principles should be remembered. They are few, and facts are many.[12]
>
> Information is of value only to the extent to which it enters into one's thinking.[13]
>
> It "from the standpoint of memory is of two kinds: That which we need so constantly that it must be kept 'in mind,' and that which we look up as occasion arizes. . . . Efficiency requires, among other things, that the mind be not overloaded." [14]

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[8] Haldane, J. B. S.: Science and Cash, Atlantic Monthly, February, 1926, p. 175.

[9] Robinson: Humanizing of Knowledge, p. 76.

[10] Robinson, Humanizing of Knowledge, p. 99.

[11] Robinson: Humanizing of Knowledge, p. 106.

[12] Swift, E. J.: Psychology and the Day's Work, p. 270.

[13] Swift, E. J.: Psychology and the Day's Work, p. 198.

[14] Swift, E. J.: Psychology and the Day's Work, p. 199.

And take even the opinion of a man in a specialty so elaborate as Paul Ehrlich's, of whom it is said: "It is interesting to note that he considered the acquiring of unnecessary knowledge as actually undesirable."[15]

Let any one who doubts the soundness of the principles stated by these men consider not simply the knowledge which constitutes his daily working equipment, but that which forms the background of his intellectual position in life. I would reduce the time of academic *undergraduate medical education* on the basis of these sound educational principles. With such principles as a guide, and with insistence on a supplementary clinical training, I have the temerity to believe we could very much improve on the longer education we are now giving.

As to how I would reduce the length of the academic course in medicine I shall only hint by referring to my experience with this paper: It was originally twice its present length; when I was confronted by the necessity of shortening it, I did so—and to the advantage of the paper.

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MEDICAL EDUCATION AND THE YALE ANNOUNCEMENT

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We may ask regarding the medical curriculum the same old question which Professor Jennings[1] has recently asked about man, "What's the matter with the medical curriculum?" and no antiphonal chorus answers back, "It's all right." If it is not all right, what is the matter with it, and what has it failed to do? There is nothing more important to the student or to the medical profession than these two difficult questions.

A certain group of articles on medical education usually begin with the statement that the chief object of medical education is to produce capable practitioners of medicine. Such an assertion sweeps far beyond the border of obviousness. No sane person questions the statement or is unaware of the thought conveyed. The chief duty of the medical school *is* to educate or develop practitioners of medicine, but this obvious assertion immediately suggests the question, Who is to teach and train these future practitioners of medicine? Is not another major function of the medical school to produce the teachers and investigators who are to constitute the faculty of university medical colleges?

The problem in full involves two considerations: First, has the present system of medical curriculums in this country served excellently well for training the practitioner, and secondly, has it been successful in producing teachers for the medical faculty? Some might claim that the present system is very good, if not the best, for training the medical practitioner. However, an attentive listener will frequently hear from persons having considerable knowledge of the subject that this system does not give the best results with the materials at hand. Good physicians are produced, but it is also probably true that the system might readily be improved, so as to give a far better and more useful training to the future practitioner.

When we attempt to answer the second question, namely, whether the strict class system of the present curriculum supplies the teachers for the medical schools, all must admit that in many directions it has largely failed. The professors and teachers in the clinical subjects have chiefly, if not almost entirely, been trained under this system, but the best of these have invariably been obliged to resort to further individual training and education in order to equip themselves to start their teaching career. When, however, we consider the laboratory and so-called fundamental departments of the medical school, one is disappointed to find that the professors, teachers and investigators in these departments are not, in the majority of cases, products of the medical curriculum. A few years ago, I[2] pointed out that only three or four professors of biochemistry in American medical colleges had ever pursued the medical curriculum or taken a medical degree. About 50 per cent of the physiologists had been trained in other schools of the university rather than in the medical college, and only 55 per cent of the anatomists of professorial rank had experienced the training supplied by the medical curriculum.

This state of affairs certainly indicates a considerable lack of success on the part of the medical colleges in exciting interest in the laboratory branches of medicine, and also a failure to encourage and develop the type of student who is primarily interested in becoming a scientific investigator and teacher in the fundamental departments of the medical school. There is no doubt that persons with such interest do exist in this country, and that they go to the university to equip themselves for exactly this kind of a career. These persons, after attending the other schools of the university and acquiring their preparation, have then come to join the medical faculties of the country. They have been admitted through necessity, on account of the fact that the medical colleges have themselves been unable to produce a sufficient supply of teachers and investigators to man their own faculties.

The situation in some branches has recently bordered on the deplorable: A few years ago there was available at one time three of the most desirable professorships in this country in a given laboratory branch. But there was not, in the opinion of the faculties concerned, an altogether desirable man available for any one of the three positions—in fact, the condition demonstrated in a decided manner that there were not enough fully recognized professors to go around, even for the best medical schools. A considerable makeshift was resorted to in meeting this situation, and the general development of the particular subject in this country was at least not greatly advanced.

Recently, a strikingly similar situation has presented itself in another laboratory subject, and two of the leading medical schools with the largest budgets for the given departments in the country have been unable to secure the kind of men they most desire for their positions. In the laboratory departments of the medical colleges, there are often two or three positions available for every man well equipped in the subject. This is certainly a most embarrassing disadvantage to the medical schools and is quite in contrast to the situation in chemistry, physics and biology in this country, in which there is actually more than one fully qualified man available for every position in the better universities. If the universities do produce men scientifically trained and qualified to man the other natural sciences, why is it that the medical schools have not acquitted themselves equally well? This is certainly not impossible to accomplish in the medical school, as one readily recognizes on surveying the European situation. In more than one of the continental countries of Europe, there are several fully equipped men available for every vacant professorship in the medical sciences that occurs. Not only do these medical schools produce an abundant supply of men for their own faculties, but also it frequently happens that professorships in other departments of the university are filled by men trained in the medical colleges. In other words, the medical schools in several European countries are real functioning divisions of the university. These schools have not only trained practitioners of medicine which compared very favorably with our own medical corps during the Great War, but also have produced a distinguished personnel to man their medical faculties.

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[15] Science, April 11, 1924, p. 33.

[1] Jennings, H. S.: Promethius, Today and Tomorrow Series, New York, E. P. Dutton & Co., 1925.

[2] Stockard, C. R.: The Laboratory Professor and the Medical Sciences in the United States, J. A. M. A. **74:** 229 (Jan. 24) 1920.

There are certain physicians in the country who would meet this problem by having these laboratory branches taught by practitioners of medicine on a part-time basis. They forget that teaching scientific subjects is a profession in itself and cannot be satisfactorily done as a side issue. The teaching of medical students is no more the job of an amateur than teaching chemistry to engineers. Surely one would not prefer an anatomist rather than an abdominal surgeon to remove his appendix any more than he would prefer a surgeon instead of an anatomist to explain the morphologic significance of structural arrangements. Medical education is now largely, as it should be, influenced by the universities, since they conduct most of the medical schools.

FAULTS OF CLASS SYSTEM AND TYPE OF CURRICULUM

When all is considered, there is some reflection on the total accomplishment of the American medical school in failing to produce the scientific members of the medical faculties, and the doubt also arises in the minds of many as to whether our schools really make the best practitioners of medicine out of the material that comes to them. One of the chief causes of this trouble is largely, I believe, the prevailing class system and the medical curriculum itself. The medical classes are run on lines closely similar to those of the elementary schools. The curriculum is, as a rule, much more rigid than even the undergraduate arts college curriculum. Many of the better medical schools have high requirements for admission, and their students must have received baccalaureate degrees from college. Such students are sufficiently mature and sufficiently educated to enter any of the graduate schools of the university; they are certainly advanced enough to be treated as individuals and to be allowed to work somewhat as their talents and temperaments direct. Yet in the medical school these college graduates are put into rigid classes, just as if they were entering an academy. Each class has mapped out for it a definite routine of courses which every member must attend at the same time and which the entire class must finally finish on the same day. A glance into the world at large would suggest to any one that no fifty persons can complete exactly the same task in exactly the same length of time, aside from the fact that they will not all do it equally well. Some persons are capable of completing a given task in half the time required by others while, on the other hand, some may require far more time than the average, and yet, in the end, the slow individual may accomplish the task best of all. Is it absolutely necessary that this class group of different students must lock-step through any particular course in the medical school? President Lowell[3] of Harvard has recently emphasized the fact that the individual student is the actual unit in education, not the course or the class. In medical education the course and the class may be actually smothering this unit.

Since there are to be only a certain number of courses and every student is to take each one of them, the members of the faculty naturally begin to compete and, to put it mildly, wrangle among themselves for their individual allotment of hours in which to attempt to cover their subjects in a routine way. This brings about a rigid and entirely arbitrary division of time for the several courses, which not only concerns a given school but has actually extended into national proportions, and committees are appointed from the country at large to determine how much of the student's time must be allotted to this, that and the other course.

In such an arrangement, it is erroneously presumed that all teachers can present one subject in a more or less satisfactory way in exactly the same number of days, and that any subject is equally important or equally unimportant, in spite of the ability and distinction of the teacher. One can scarcely imagine an arrangement more completely devised to suppress the individuality and taste of the student or more surely to stunt and dampen the originality and enthusiasm of the teacher. Periodic waves of dissatisfaction develop against this system and a national epidemic of curriculum revisions takes place, one of which we passed through only a few years ago. The interesting thing is that, in spite of this feeling of dissatisfaction, nothing really important happens to the curriculum; there is applied merely a process of addition and subtraction; a few courses are slightly extended in time and most courses are curtailed, but the general system of lock-step class performance is strictly maintained.

Now, is this type of medical curriculum actually necessary or essential in order to produce a good practitioner of medicine? Is it not possible or even highly probable that a better trained, more independent and thoughtful practitioner of medicine might be derived from a more encouraging and diversified type of education?

THE YALE PLAN

A highly promising and stimulating occurrence has recently been reported from the Yale University School of Medicine. The faculty there has decided to conduct the medical school in the same general way that has proved successful in the other divisions and schools of the university. Please let it be understood that by "university" I am not referring to the undergraduate college but to the schools that are attended by the mature students who have previously received their bachelor degrees from college. The graduate schools constitute the university in contrast to the college. The general attitude in the university is that a mature student enters there to receive an education or a training in some subject or profession that he desires to pursue throughout the rest of his life. He must be equipped for this job not merely by being crammed with facts but by being helped to learn the method and the philosophy of his calling. If, for example, he expects to be a chemist, he enters the school or department of chemistry and, in conference with one or more professors in that school, works out a general plan of study and then goes ahead on his own responsibility to attend certain courses of instruction and laboratory work, until he has finally covered the chosen field in a sufficiently complete way. He then applies for some form of qualifying test or examination, on the basis of which he is to be granted a degree and delivered into the world to work in his science or profession.

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[3] 3. Lowell, Lawrence: Address before Meeting of American Medical Colleges, Boston, 1925.

The medical student, as I understand the plan, will approach the Yale medical faculty in the same way—he comes desiring to receive an education for the medical profession. He ascertains the general requisite of study necessary to attain his ambition and he also learns, of course, that the various subjects must be pursued in a more or less definite order because certain subjects presuppose a knowledge of others. The entering student will, therefore, probably register for courses in anatomy, chemistry and beginning physiology, but he will not become a member of a class. He may even be permitted to try certain clinical subjects before taking the laboratory branches, as Dr. Cushing[4] has recently suggested in a discussion of medical education. There will be no first-year class. There will merely be a school filled with medical *students*.

The department of anatomy will offer courses in anatomy that any one in the school may elect, and the professor will teach these courses in as systematic a manner as he thinks fit. He is free to make the course sufficiently long to cover the subject as he decides is necessary. If demonstrations are given, they will occur, of course, at particular times, and all students who care to attend them will necessarily appear at the given time. The laboratory work may also be systematic and formal or may be very open in its arrangement. The student is perfectly free to attend as much or as little of this subject as his interest dictates. The bright, fast student might be able to cover the subject in a very short period of time; the ordinary student would require longer, and the slow student, who might at the same time be a very intelligent person, could remain as long as he found it necessary to complete the subject to his own satisfaction. The professor's task is to encourage, stimulate and lead the students but in no sense to herd and to drive them in order to force them to study and learn the subject he is teaching. After the student has had a sufficient experience in a certain course, he then registers for further courses in the medical school, and is taken into pathology, medicine and surgery. The professors in these subjects, as in other branches of the university, will at their own discretion admit students to their course who they feel are properly qualified on account of their previous work and knowledge of underlying subjects. Examinations may be given at regular or irregular intervals, and all students having been previously registered in any particular course may present themselves for these examinations in order to qualify in the subject. Up to the present time, in all universities it seems necessary to have some type or method of examination in order to determine whether a student has actually succeeded in mastering a sufficient knowledge of a given subject; in other words, he must qualify on what he has undertaken. The world in general requires this much of us all.

The great advantage of the Yale plan is the emancipation of the student from the rigid class which holds back the quick, bright individual and embarrasses the intelligent, slow student, neither of whom keeps step with the mediocre pace-makers. The stupid person is readily eliminated, being unable to find his way without a herd to follow.

It is undoubtedly a most important occurrence for American medical education that the Yale medical school should have put itself on a truly university basis in its function as well as in its organization. The university method is certainly the one that develops individuality and originality in the student, and at present it is the only system that fully allows a student to become interested in certain phases of a subject and to be free to develop and follow his interest in those directions. The university system also encourages and promotes the highest and most stimulating type of teacher. The teacher must become a leader rather than a schoolmaster. The student becomes interested in the teacher and in his manner and methods of work, not as a person who is superior and set over him, but as a person of wider experience, with whom he is privileged to work as an associate. Every one remembers from his student days a few such teachers, and he values any opportunity he may have had to have been associated with them instead of having merely sat under them.

This step on the part of the Yale medical school will be looked on as quite a venture by a great number of medical educators in this country. It will likely be somewhat misunderstood. Some will sense a smack of radicalism. Others may imagine it the adoption of a loose, unsystematic, indefinite system which can never be substituted for the rigid arrangement now generally followed; but to all those who have worked and studied both in the college and under the medical curriculum drill, as well as in the true university system, there will appear nothing new or dangerous in this undertaking. It is just this truly university method that requires more of the student than any other—he is put on his own responsibility; he is treated as a man and an individual and, if he has the right quality in him, he always responds. The most earnest, sincere, hardworking group of students that one may find is to be seen working year after year in the university departments of biology and other sciences in this country. These students must stand on their own responsibility and their own initiative. Any person who thinks that the Yale medical school has lowered its standards or has made its medical course easier to get through had better try such a system for a year, and he will soon learn how much it requires.

Of course there is no reason to expect that other schools in the country may immediately adopt this change. Certainly not all of them could, nor are all students equally suited to such a method. But all medical schools that do inaugurate such a plan will very probably attract a highly qualified and intelligent group of medical students.

The country at large owes its thanks to the faculty of the Yale medical school for having taken a definite step in what is probably a very wise direction. It is at least gratifying that one school should have asserted its individuality and independence by introducing a really different system, rather than simply following through the stagnant style of addition and subtraction, as applied to the several courses in the medical college.

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[4] Cushing, Harvey: The Clinical Teacher and the Medical Curriculum, J. A. M. A. **82**: 841 (March 15) 1924.

THE INCREASE IN MEDICAL KNOWLEDGE

Obtaining a medical education is, after all, an intellectual pursuit leading to one of the learned professions. Medicine is really a much higher profession than most medical men realize, and the fact that it may be practiced in a crude and routine way, with a kind of success and prosperity, does not argue against the fact that it can be properly practiced and possibly advanced only by persons understanding and applying scientific biologic knowledge. The curing of disease must be a reestablishment and adjustment of the deranged functions of particular organs and parts of the body, and in order to do this it seems logically true that the physician should have a thorough comprehension of the functions and interrelations of these organs and the way in which they have been disturbed or modified by the aggravating condition. This is certainly no simple problem, and in every sense is a most difficult one to undertake. It cannot be done on an arbitrary, dogmatic rule-of-thumb system which befits to some extent the trade school and leads to a trade or business rather than a profession. When one advocates poorer schools and short cuts and medical apprenticeships in order to produce cheap doctors to supply the country districts, we wonder and then realize that medicine has passed on considerably from where it was forty years ago. To become a constructing engineer today, with the vast developments in building and mechanics, one can scarcely qualify on the training that was adequate years ago. Yet, a trade apprentice may still become a carpenter or a mason. Medicine has advanced wonderfully and is a very different thing now from what it was at the middle of the last century. It may be stated that it almost requires a different taste and different type of mind for the highest quality of medical practice now as compared with then, and this is said with all regard and respect for the high ideals of the physicians of past generations. The ideals have not changed, and it is very questionable whether they have been improved on; but the knowledge necessary for an intelligent performance in the profession has certainly been remarkably revolutionized and increased.

Education in the fundamental principles of a profession is the kind of training which enables the professional man to attack and solve the problems that present themselves in practice. After all, when we really think seriously, we are inclined to believe that medical education does belong to the university system rather than to the academy drill.

Adequate Public Health Nursing.—It has been said that public health work today in any community can be measured by the extent to which public health nursing has been developed. To a certain extent this is probably true; but opinions as to what constitutes an adequate nursing service seem to differ rather widely. The theoretically effective ratio is usually 1 nurse to 2,000 or 3,000 population, and yet in ninety-nine large cities for which records are available the average ratio for the whole group is 1 to 5,000, approximately. It varies from 1 to 6,300 in the group of larger cities to 1 to 5,400 in the smaller cities. In the "ideal" plan of organization for a city of 100,000, proposed by the committee of the American Public Health Association in 1923, thirty nurses were considered necessary to provide adequate preventive work, or an increase to fifty nurses if bedside care on an hourly basis is provided. Even with more conservative provisions, it is apparent that the majority of cities at the present time are inadequately equipped to provide even a reasonably satisfactory service.—Cumming, Hugh: *Pub. Health Rep.* **41**:379 (Feb. 26) 1926.

PHYSICAL FITNESS IN THE COLLEGE *

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Perhaps there is no better demonstration of the fallacy that may arise from limiting oneself to a special point of view than appears in findings with reference to the physical condition of college men. The attitude of the physician toward health may too often be stated that as a result of the examination of an individual, if actual disease is not found, the individual is considered well.

By this process the human race consists of two groups—the sick who have been thus labeled because of medical examinations that look for disease, and all the rest who are perforce said to be well. During recent decades, this undistributed group has been somewhat reduced by discoveries that afford labels for previously unidentified diseases. Among these conspicuously appear thyroid disease, glycemia and allergy.

Work in college groups almost exclusively confined to medical examinations shows results on the whole very similar to those secured by Lee at Harvard, where actually recognized disease was found to be almost negligible from a statistical standpoint. This frequently means that, apart from some slight limitations placed on those with heart disease with reference to athletics, the college men are left to the tender mercies of the educator who feels justified in making the work schedule on the principle that all men are physically equal. The physical educator acts on the same assumption and often overtrains the physically unfit, not realizing their true condition.

If, however, college men are examined from a different point of view—that of impaired health or, as it may better be described, physical unfitness—a very different state of affairs is at once discovered. As Lee[1] says: "However, it was perfectly evident that although 95 per cent of the college population were organically sound, in that no organic defects could be found in any organ or tissue of the body, nevertheless 95 per cent of the college population were not entirely robust, healthy individuals." Thus, for example, 645 men entering Dartmouth College in the class of 1927 were distributed on the basis of the relationship of weight to height, as shown in table 1.

Table 1.—*Relationship of Weight to Height in Six Hundred and Forty-Five Dartmouth Students*

	Per Cent
Obese (20 per cent or more over average weight)	3
Safety-weight zone (0 to 20 per cent over average)	42
Borderline (underweight, less than 7 per cent)	25
Seriously underweight (more than 7 per cent)	30
	100

This classification, which is the result of a study of many thousands of physical-growth and social examinations made in clinics and schools, agrees in all essential details with the grouping used in a Carnegie Institution report made by Director Davenport.[2] Here it is shown that the underweight groups (characterized by Davenport as "slender" and "very slender") were from six to twelve times more in danger of tuberculosis and from three to six times more susceptible to respiratory diseases and nervous disturbances than the general population.

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* Detailed accounts of the physical fitness work in colleges have appeared in the Dartmouth Alumni Magazine for February, May and November, 1925, and in the Massachusetts Institute of Technology Publications **60**, no. 11. Reports in more popular form can be found in the Woman's Home Companion for July and September, 1925. Reprints will be furnished on application.

[1] Lee, R. I.: Some Confessions of an Internist Regarding Body Mechanics, J. Bone & Joint Surg. **5**: 747 (Oct.) 1923.

[2] Davenport, C. B.: Report, Carnegie Institution, December, 1925.

If we make further examination of college men with reference to their health habits, we find that in this respect they are apparently no better off for having gone to college. More students who need to do so wear glasses at Harvard at the close of the course than at the beginning (freshmen, 38 per cent; seniors, 42 per cent). But in the matter of health habits a study of public, parochial and private secondary school students, and of men and women in their undergraduate years and in medical school, shows no indication of any increase in health intelligence, because training the intellect has little or no effect in improving health habits.[3]

Apparently this percentage of physical unfitness with the accompanying predisposition to disease, as shown by Davenport, is not being taken as a cause of alarm. Our early findings concerning children were very much the same, and these were abundantly confirmed by the draft during the late war. The published material from these draft board examinations gave a practical foundation for a system of preventive medicine, yet almost nothing has come from them.

We can do something more than comment on this condition of affairs, for we are able to report remarkable results in dealing with the situation as far as it concerns the college man.[4] We have hundreds of charts made in the early stages of work with children, which register the ineffectual results of the usual general attack on health habits and poor hygiene. Actual progress began when enough cases had been analyzed to make a rough classification of the real causes of the major part of these cases of physical unfitness. Attention was then focused on (1) finding the physical and social causes of the particular condition and accomplishing their removal, and (2) bringing together in an adequate program the forces necessary to raise the health intelligence of the individual. When the causes of the condition have been eliminated and he has become free to gain, nature and better habits of living will get the child well.

We have found, on the whole, that the same causes operate among college men as appear in dealing with the younger members of the growing period. College students naturally come from homes of greater opportunity than the average economic status. We have been surprised to find that there is often a higher percentage of underweight in the families of the well-to-do than in those who are socially less fortunate. The greater attention given by the former group to the removal of physical defects and to better food and health habits favored by superior environmental conditions seems to have been more than counterbalanced by the demands of a more complicated social life in home and in school, and by the overdoing of recreation and amusement.

Fully 90 per cent of these cases of physical unfitness can be traced to one or more of the following causes: (1) physical defects, especially nasopharyngeal obstructions; (2) lack of control (this includes many factors that are now receiving consideration in the field of mental hygiene); (3) overfatigue; (4) faulty food and food habits, and (5) faulty health habits. It is evident from a study of this group of causes that the condition they deal with is fundamentally medical yet that it is essentially a problem of education. This fact no doubt helps to an understanding of the slowness with which the situation has been brought to consciousness and dealt with by means of an adequate program.

Reference has already been made to the cordial support given by students and executives to this new departure in college health education. The only drawbacks were found among men of academic bias who cannot easily rid themselves of the class-room mind. To them the college program is a sacred matter not subject to change on the basis of new experience and needs that old conditions did not make it possible to recognize. Any interference with their vested rights seems unwarranted, and justification of the position taken, if any justification seems called for, is founded on formal and academic considerations and shows no appreciation of the dependence of mental development and achievement on adequate health conditions.

This type of mind is apt to be found as often among men working in the newer fields as it is among those who are closer to the classic tradition. In marked contrast is the remarkably wide vision of many of the men who are now at the head of large educational situations in school systems and colleges. They are able to see that, even for those who prize only such accomplishments as they desire to distinguish from the physical by emphasis on such terms as mental, intellectual and spiritual, the only sure road is that of essential health requirements. But these men of larger vision also see that they have responsibility for the great waste of life due to an effort to achieve academic, athletic and other results without making provision for the foundations on which they rest. It is the old story of bricks without straw; or, to change the figure, modern education demands and gets its pounds of flesh without considering that in so doing it renders impermanent and unserviceable much of the accomplishment for which it has worked so hard. After all has been taken into account, there is no more fundamental task for the school or college than to make such requirements as will bring its members at the start into condition to cope adequately with the factors essential to the training it is to afford them, so that during college life and in the years after leaving college they may pursue a course of mingled intellectual and physical activities in comfort and health, with a real appreciation of the joy of living and a sense of adequacy in meeting the economic and social needs of private and public life.

SUMMARY OF OBSERVATIONS

1. Of 645 men entering Dartmouth College in the fall of 1925, 3 per cent were obese (20 per cent or more above average weight); 25 per cent were underweight, but less than 7 per cent; 30 per cent were seriously underweight (7 per cent or more under average weight for height); 42 per cent were within the range of the safety weight zone.

2. The basis of comparison is the gain made by an average 16 year old boy—the last year of rapid gain—an annual rate of 8 pounds (3.6 Kg.).

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[3] These findings on "health intelligence" will be reported in a later article.

[4] Practically all sections of the period of growth have been successfully tried out with this nutrition or physical fitness program, with the exception of the industrial group parallel in years with secondary school and college life. Preoccupation with school and college problems has prevented more than a glance at the possibilities of this section. Some experiments have been made by cooperating agencies. An interesting report is at hand from a group of nineteen young men and women ranging 20 years of age and more, employed in Indianapolis. The average percentage of underweight at the start was 18. During a term of thirteen weeks, the members of the class averaged 4¼ pounds (2 Kg.) gain in weight. This would amount to an annual rate of 18 pounds (8 Kg.).

In representative groups, the average gain per week for each member of physical fitness classes ranged from $^{36}/_{100}$ to $^{46}/_{100}$ pound.

A comparison of the weghts of 427 not including those in physical fitness classes, taken in the fall and in May, shows practically no gain in weight for the group as a whole, except that the obese group increased 50 per cent in numbers during the interval.

TABLE 2.—*Gains of Representative Groups (Basis of Comparison Gain Made by Average Sixteen Year Old Boy)*

	Men	Percentage of Gain	Average Pounds	Annual Rate, Pounds
	60*	295	...	24
	89	313	6.4	25
	70	267	4.7	21
	25	333	6.8	27
Athletes	21	464	6.2	41
Upper classmen........	22	476	5.7	42

* Averaged 12 per cent (18 $^9/_{10}$ pounds [8.6 Kg.]) underweight.

Eighty-nine men who were in physical fitness classes gained an average of twelve and one half times as much as did 427 men not in classes in a longer period of time.

Fifty underweight men in physical fitness classes gained four times as much as did fifty underweight men not in classes. The former group gained 150 per cent of the gain in height made by the latter group.

Twelve men in the first nine weeks of class work made 477 per cent of the gain they had made in the nine weeks before entering on the physical fitness program.

Ninety-one men reporting in April gained, by the time they entered college in September, 759½ pounds (344 Kg.). This amounts to 36 per cent of the actual deficit of the group reported.

Various groups in a physical fitness class averaging 333 per cent showed, in various sections, the percentages given in table 3.

TABLE 3.—*Data of Weight Gain in Various Sections of Physical Fitness Class*

Excess social activities...........................	267 per cent
Training for teams.................................	199 per cent
Physical overexertion	223 per cent
Not enough outdoors...............................	274 per cent
Sweets between meals..............................	216 per cent
Poor cooperation	216 per cent

In other classes, men observing late hours made nearly 100 per cent less than the group as a whole; tobacco users averaged 263 per cent, as against 307 per cent made by nonusers; those marked excellent or good for carrying out physical fitness program instructions gained from 50 to 100 per cent more than those marked fair or poor.

3. The underweight men average about six physical defects each—a range of from two to ten. About half of these were due to nasopharyngeal obstructions and about one fourth were defects of posture. From a third to a half the men had already been operated on for the removal of diseased adenoids and tonsils. In one group 84 per cent were recommended to have expert nose and throat examinations—48 per cent received negative reports and 36 per cent were advised to have throat operations.

In the class averaging 333 per cent in weight, the percentage of gain in the various groups was as shown in table 4. In the group averaging 295 per cent, those who deferred recommended operations averaged 152 per cent gain.

4. The chief difficulties, in the order of their effect on weight, were: (*a*) grouped examinations; (*b*) "chinning" season, carnival, and vacations; (*c*) competition in athletics and other extracurricular activities.

TABLE 4.—*Data of Weight Gain in Underweight Men*

Number of Physical Defects	Percentage of Gain
From 2 to 4..	378
From 5 to 7..	310
From 8 to 10..	153

5. For the entire freshman year of the class of 1927 at Dartmouth, the obese group showed the lowest percentage of illness from nasopharyngeal causes; the underweight students had twice as much nasopharyngeal illness as the optimal group. About 40 per cent of the students were absent for illness during the year, losing about five and one-third days for each man ill and about two days for the whole class.

TABLE 5.—*Morbidity Data for Class of 1927 at Dartmouth*

College Year	Percentage of Illness
1921...	29
1922...	29
1923...	44
1924...	32
Distribution According to Residence	**Percentage of Illness**
5 houses, each less than 50 men.........................	27
10 houses, 50 to 100 men................................	31
1 house, 103 men..	39
1 house, 155 men..	43
Residing in town...	56
Fraternities, 16 each....................................	32

6. The length of time for meals is given in table 6.

TABLE 6.—*Time Taken for Meals in Class of 1927 at Dartmouth*

Eighty Men	Average	Range
Breakfast	12.4 min.	7 to 19
Dinner	15.4 min.	8 to 22
Supper	16.0 min.	8 to 24

7. The average number of calories for twenty-four men was 3,000, with a range from 2,400 to 4,100. The seven men making the best gains and the seven making the poorest gains came within fifty calories of the average for the entire group.

8. In the class of 1928, at Dartmouth, the underweight men not in physical fitness classes who lost weight during the college year averaged 0.6 less in college marks than did those who gained in weight in this time.

For both semesters, the underweight men had twice as many grades of less than 1.0 as the average of all the members of the class, and three times as many as were found in the group ranging from average weight to 10 per cent above the average. In the attainment of grades from 2.5 up, the underweight men were below the average, and the safety weight group ran above the average.

The obese men, 20 per cent or more above average, ran below average in high college marks and above the average in low marks. They showed twice as many low marks and less than a third as many marks of the higher grade as were found in the safety weight group.

In a group of eight men "withdrawn" from college, seven deserved zero in "control" in the physical fitness classes. Their average "health intelligence quotient" was 43 on a scale of 100. Their average college grade was 0.8. Four of them were in the lowest decile group (10); two were in group 9; one was in 7, and one in 3.

In the class of 1927, in the Massachusetts Institute of Technology, a comparison of grades received in college during the first term and those given by the nutrition worker showed that the ten best in college work had been ranked in the physical fitness class an average of 68 per cent, while the ten lowest in college grades averaged 46 per cent in our class.

The highest seven in college grades made an average gain in weight of 359 per cent; the second seven averaged 299 per cent, and the lowest seven, 225 per cent.

270 Commonwealth Avenue.

LEAD POISONING IN NURSING INFANTS

REPORT OF TWO CASES DUE TO THE USE OF LEAD NIPPLE SHIELDS *

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Lead poisoning in children is well known though not common. Lead poisoning in nursing infants is extremely rare. The previously reported sources of lead poisoning during the nursing age are varied. Congenital lead poisoning is rare. The two cases of Ganyaire [1] and of LeGrand and Winter [1] are undoubtedly authentic, as lead was demonstrated in the placental, hepatic and cerebral tissues of two infants dying in the first days of life. The excretion of lead in the breast milk of mothers poisoned by the use of lead-containing skin cosmetics and hair dyes was the source of lead poisoning in several young infants among the cases recorded by Dufour.[2] Suzuki and Kaneko [3] have recently reported that the long observed serous meningitis in Japanese infants is due to white lead powder used as a cosmetic by young Japanese mothers. One cannot be certain that the nursing infants may not also have sucked lead from the skin or hair of the mothers, or carried it to their mouths on their hands. Lead preparations applied to the breasts of mothers in the treatment of diseased nipples is another recorded source. Bouchet [4] observed poisoning in a 3 months infant, due to the use of a lead lotion on the nipple. Von Hove,[5] Roussel [6] and Holt [7] cite cases in which the nursing infant was poisoned by the application to the breast of an ointment containing lead acetate. Guerbet [8] observed lead poisoning in a 3 months infant secondary to the use of nursing bottles that had had lead incorporated into the glass. Dufour [2] mentioned instances of poisoning due to nursing bottle stoppers, both of metallic lead and of lead-containing rubber, and also from lead frames in which the nursing bottles were held. Medication of the infants' skin by lead plasters and lead dusting powder was the source of poisoning in the cases of Friedman [1] and Stephenson.[1] Veriot and Remy [9] observed lead intoxication in a 12 months infant due to the swallowing of a block of lead printers' type. Inhalation of lead dust, lead paint from a doll and clothing material impregnated with lead are given as sources of lead poisoning in infants of nursing age in the cases of Dufour.[2]

We have not found the use of lead nipple shields by nursing mothers previously demonstrated as a source of lead poisoning in infancy. Two such cases are the subject of this report.

REPORT OF CASES

CASE 1.—*History*.—A girl baby, white, aged 4½ months, was admitted to the Babies' Hospital, Nov. 3, 1923, because of vomiting, failure to gain in weight, and "nervousness," each of approximately one month's duration. The labor had been normal, and the birth weight 6 pounds 12 ounces (3 Kg.). There had been no previous illnesses. The child had gained regularly in weight, until the age of 3½ months, at the onset of the present trouble, when she weighed 12 pounds (5.4 Kg.). The child had been breast fed continuously until the time of admission.

She had vomited persistently during the last month. The vomiting was moderately forceful and occurred from two to three times each day. This was not related to feedings and had never been bilious or blood stained. There had never been abdominal colic.

The general nervousness began approximately simultaneously with the vomiting. The parents first noted that sudden, loud noises unduly upset her and that she became "jumpy after the slamming of doors or the dropping of a dish pan." She also became fretful and restless, particularly at night. She developed head rolling, and the hands, arms and legs were in motion most of the time. Forty-eight hours before admission, rightsided jerky movements began, and twenty-four hours before admission there were generalized twitchings. A slight stupor had been present for twenty-four hours. In the spinal fluid examination twenty-four hours before admission, clear fluid, 60 cells, a trace of globulin and the presence of sugar were reported. No paralysis or convulsions had been seen. She had gained no weight since the onset of the symptoms. The appetite had remained good. The baby had nursed vigorously throughout. The stools were normal in character and frequency.

Physical Examination.—The infant's measurements were: head circumference, 16¼ inches (41 cm.); chest, 15 inches (38 cm.); abdomen, 15 inches, and length, 23½ inches (59.6 cm.). The child lay in a slight stupor. The skin was free from eruption and its turgor good. The subcutaneous panniculus was scanty. There was generalized pallor. The glands were normal. The head was in the normal position without opisthotonos. The anterior fontanel was large, four fingerbreadths in diameter, tense, and definitely bulging. There was no craniotabes. The pupils and pupillary reflexes were normal. There was a bilateral, inconstant, horizontal nystagmus. The right ear drum was slightly congested. Chvostek's sign could not be elicited. The oral mucous membranes were pale without evidence of stomatitis, and a lead line was not visible. The neck was moderately spastic and not tender. Brudzinski's sign was not present. The thorax, abdomen and genitalia were normal. The extremities were spastic, with hyperactive deep reflexes. Positive bilateral Kernig's signs were obtained. Ankle clonus could not be elicited. Tache cérébrale was present. Twitchings of the extremities, reported in the history, were not present.

Electrical reaction was: anodal closing contraction, 3; anodal opening contraction, 10; cathodal closing contraction, 2.4, and cathodal opening contraction, 8.

The Pirquet skin test was negative.

Laboratory Findings.—The spinal fluid was slightly opalescent, with normal pressure, and contained 70 cells (80 per cent polymorphonuclears [?]); the globulin test was + + + +;

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* From the Department of the Diseases of Children, Columbia University College of Physicians and Surgeons, and the Babies' Hospital of New York.

[1] Quoted by Dufour-Labastide, Thèse de Paris, 1901 and 1902.

[2] Dufour-Labastide: Thèse de Paris, 1901 and 1902.

[3] Suzuki, T., and Kaneko, J.: Serous Meningitis in Infants from Lead Poisoning, J. Oriental Med. **2**: 55 (Feb.) 1924; abst., J. A. M. A. **82**: 1819 (May 31) 1924.

[4] Bouchet: Gaz. d. hôp., 1875.

[5] Von Hove: *Bull. Soc. méd. de Gand*, 1889, *p.* 131.

[6] Roussel: Loire méd., 1898, p. 331.

[7] Holt, L. E., Jr.: Lead Poisoning in Infancy, Am. J. Dis. Child. **25**: 229 (March) 1923.

[8] Guerbet: Lead Poisoning from Nursing Bottles, Nourrison **6**: 344, 1918.

[9] Veriot and Remy: J. de clin. et thérap. inf., 1894.

the sugar was 46 mg. per hundred cubic centimeters, and chlorides, 738 mg. per hundred cubic centimeters.

Blood examination showed: hemoglobin, 50 per cent; red blood cells, 2,500,000; white blood cells, 18,600; polymorphonuclears, 48 per cent; lymphocytes, 40 per cent; mononuclears, 2 per cent; eosinophilic polymorphonuclears, 1 per cent, and transitionals, 1 per cent. There was heavy and extensive stippling of the red blood cells. Several stipple cells were seen in each high power field. The urine was normal. The blood Wassermann reaction was negative.

The discovery of the stippled cells suggested lead poisoning. The mother was questioned again, and related that she had worn lead shields on both breasts continuously since the day of the patient's birth. No ointments or lotions had ever been used in conjunction with the shields. Before nursing she had, at times, washed the nipples with boric acid, but "more than half the time" the infant had been put to breast without any cleansing procedure. The mother had been free from symptoms throughout the infant's illness. Several specimens of the maternal blood showed no stippling of the erythrocytes.

Hospital Course.—The baby was weaned and was given potassium iodide, 2 grains (0.13 Gm.), every four hours during the twenty-three days she was in the hospital. There was an almost immediate improvement in the vomiting, which occurred only three times during the three weeks' observation. Excessive movements of the arms, hands, and legs were observed after the first examination. These nervous symptoms gradually subsided, with the exception of a series of convulsions on the eighteenth and nineteenth days after admission. They were associated with the purulent right otitis media and did not recur after myringotomy. The anemia persisted. Stippling of the red blood cells was observed on the seventh, twentieth and twenty-third days. Four later spinal fluid examinations were unsatisfactory, because of the presence of fresh blood in the specimens. The weight remained stationary while the patient was in the hospital. Chemical examination of the feces for lead was positive in one examination. Lead was not demonstrated in the urine or spinal fluid; it was found in the breast milk on two occasions. However, after careful cleansing of the breasts with ammonium acetate, lead could not be detected in the breast milk. We concluded that the lead was not being excreted in the milk, but that its source in the earlier examinations was the skin, and that the lead had contaminated the milk during the manipulation of pumping the breast.

Subsequent Course.—The patient has since been observed frequently, and is now 2½ years of age. The anemia has persisted. The hemoglobin at the thirtieth month is 35 per cent and the red blood cell count is 2,800,000. No stippling of the red cells has been seen since the sixth month, six weeks after the cessation of exposure to the shields. The child is underweight for her age, weighing 26 pounds (11.8 Kg.). Mentally she is normal. There is no evidence of foot drop or wrist drop.

Case 2.—*History.* A girl baby, aged 9 months, was seen in the outpatient department of the Babies' Hospital, Oct. 1, 1925, with a history of vomiting since the seventh month, pallor, and loss of weight since the seventh and a half month. The delivery had been normal, and the birth weight was 6 pounds 7 ounces (2.9 Kg.). There had been no previous illnesses. She had been fed exclusively from the breast, and had registered a regular gain in weight, reaching a maximum of 16 pounds (7.3 Kg.) at 7½ months. The growth and development had been normal. The head was held up at the fourth month, and she had manifested normal muscle power generally. Persistent vomiting had been present since the seventh month. It came on while the infant was still making a satisfactory gain in weight. It had had no relation to the taking of food, had been forceful, and had occurred two or three times each day. Neither bile nor blood had been seen in the vomitus. There had been no abdominal colic. The baby had had moderate constipation. The appetite had remained excellent. A pallor had been present for one and a half months. Previously, the baby's color was good. Since the onset of these symptoms, there had been a notable change in the mental attitude, which had consisted of a lessened tendency for the child to smile and play as she had done previously. She had remained quietly on her back most of the time with little interest in her surroundings. There had been no real stupor or convulsions. She had lost 2 pounds (0.9 Kg.) in the last six weeks.

The case was considered one of gastric indigestion due to improper nursing. Attempts to correct these symptoms by a regular regimen and instructions to the mother in correct nursing were not successful. After one month's observation, further questioning revealed that the mother had begun the use of lead nipple shields when the baby was 1 month old, and had worn them constantly since that time. There had been no medication of the nipples except cleansing them before each nursing with pledgets of cotton soaked in boric acid. The mother has had no symptoms suggestive of lead intoxication. The infant was admitted to the Babies' Hospital, Nov. 4, 1925, for confirmation of a provisional diagnosis of lead poisoning by Dr. C. A. Lang.

Physical Examination.—The infant's measurements were: head circumference, 17½ inches (43.8 cm.); chest, 15¼ inches (38 cm.); abdomen, 15¼ inches, and length, 26½ inches (67 cm.). The patient, aged 10 months, was poorly nourished, with a marked pallor. The palpebral fissures were widened, giving a staring facies. There were frequent quick grimaces. She lay on her back, apparently in no pain and without opisthotonos. The head was continually rolling from side to side. There were frequent clutching movements of the hands, and continual pronation and supination of the forearms, and jerky movements of the legs and feet. The anterior fontanel was 2 cm. in diameter, flat, and of normal tension. There was no craniotabes. The pupillary reflexes and the extra-ocular movements were normal. The mucous membranes of the mouth were clean; there was no stomatitis, and a lead line could not be made out in the gums. Chvostek's sign was not present. The neck was slightly spastic without tenderness. Brudzinski's sign was not present. The heart and lungs were normal. There was no abdominal tenderness. The liver was two fingerbreadths below the costal margin; the spleen was barely palpable. Tache cérébrale was not made out. There were frequent twitching and jerky movements in the extremities, as mentioned above, with moderate spasticity. The deep reflexes were exaggerated throughout. Kernig's sign was not present, and there was no ankle clonus. Trousseau's sign was not present. There was no tenderness of the nerve trunks, nor evidence of wrist and foot drop.

Blood Findings in Case 2

Day After Cessation of Exposure	Hemoglobin, per Cent	Red Blood Cells, per Cubic Millimeter	White Blood Cells, per Cubic Millimeter	Polymorphonuclears, per Cent	Lymphocytes, per Cent	Mononuclears, per Cent	Transitionals, per Cent	Nucleated Red Cells to 100 W. B. C.	Stippled Cells per Cubic Millimeter	Platelets
3d	45	2,900,000	16,000	58	35	3	3	16	70,000	300,000
7th	35	2,500,000	12,000	56	42	2	0	3	++++	230,000
13th	45	3,000,000	8,000	41	48	0	3	2	23,000	290,000
17th	45	2,700,000	10,000	49	43	3	5	0	3,000	170,000
20th	45	3,000,000	9,000	47	50	2	1	0	3,100	220,000
24th	45	2,900,000	15,000	62	36	1	1	0	2,300	190,000
27th	50	2,600,000	9,000	67	30	1	2	0	0	190,000
35th	50	3,400,000	14,000	46	45	5	4	2	0	250,000

Laboratory Findings.—Blood examination showed: hemoglobin, 45 per cent; red blood cells, 3,300,000; white blood cells, 18,000; platelets, 300,000; polymorphonuclears, 51 per cent; lymphocytes, 44 per cent; mononuclears, 5 per cent; transitionals, 2 per cent; nucleated red cells, 19 per hundred leukocytes. There was frequent stippling of the red cells (73,000 per cubic millimeter). The spinal fluid was clear with normal pressure, and contained: 60 cells (65 per cent lymphocytes); globulin + +; sugar, 78 mg. per hundred cubic centimeters (blood sugar, 103 mg.), and chlorides, 625 mg. per hundred cubic centimeters. The blood calcium was 11.1 mg. per hundred cubic centimeters. The blood phosphorus was 6.3 per hundred cubic centimeters. The urine was normal.

Subsequent Course.—The patient was under observation for a period of six weeks. She was weaned and given phenobarbital and sodium bromide by mouth. The frequency of the vomiting diminished almost immediately, averaging once every other day during the first two weeks, with complete cessation thereafter. She began to gain weight immediately, making a total gain of 2 pounds 6 ounces (1 Kg.) in six weeks. The jerky movements of the extremities, and the head rolling subsided gradually. There was only slight irritability after six weeks. The spinal fluid was normal on the twenty-fourth day.

Further spinal fluid examination the sixth day after admission showed: slight xanthochromia; normal pressure, 34 cells (90 per cent lymphocytes); globulin + +; sugar, 77 mg. per hundred cubic centimeters, and chlorides, 675 mg. per hundred cubic centimeters. The eighth day after admission, the fluid was clear, with normal pressure, and contained 26 cells (75 per cent lymphocytes); globulin + + +; sugar was present qualitatively. The twenty-fourth day after admission, examination showed: clear fluid; normal pressure; 4 cells; globulin, 0; sugar, 55 mg. per hundred cubic centimeters, and chloride, 700 mg. per hundred cubic centimeters.

It is noteworthy that the pleocytosis, the increased globulin, increased sugar and decreased chlorides returned to normal twenty-four days after the cessation of exposure to lead. There was no similar improvement in the anemia, as shown in the accompanying table. The rapid diminuation of the stippled cells and their disappearance on the twenty-fourth day is notable. Also the high nucleated red counts in the admission blood smear and on the third day are interesting. No stippled cells of the mother's erythrocytes were seen in several specimens.

Tests of hemolysis of the blood cells in hypotonic saline solution were done on the fifth and twenty-fifth days after admission. The test on the fifth day showed a moderately increased resistance to hemolysis in saline solution, while on the twenty-fifth day the hemolysis was identical with the control. The first finding is consistent with the observation of Aub and his co-workers.[10] The tests of hemolysis in the saline solution showed:

Fifth day after admission:
  Control: Initial hemolysis, 0.45 per cent sodium chloride; complete hemolysis, 0.35 per cent.
  Patient: Initial hemolysis, 0.45 per cent sodium chloride; complete hemolysis, 0.20 per cent.
Twenty-fifth day after admission:
  Control: Initial hemolysis, 0.45 per cent sodium chloride; complete hemolysis, 0.225.
  Patient: Initial hemolysis, 0.40 per cent sodium chloride; complete hemolysis, 0.225.

Chemical examination of the excreta showed 0.224 mg. of lead in the 2,560 cc. of urine collected in the interval between the tenth and the twenty-sixth days; 2.85 mg. of lead in the 65.5 Gm. of feces collected in the interval between the tenth and the twenty-sixth days.

The breast milk was negative for lead at several examinations.

COMMENT

The use of the lead shields on the maternal breast is the only tenable source of lead intoxication in our cases. The late onset excludes congenital poisoning. Excretion of lead in the breast milk is not probable in view of the negative chemical examinations of the milk, the absence of stippling in the maternal erythrocytes and of saturnism in the mothers, and the failure of the history to establish such sources as suspicious cosmetics and hair dye. Neither infant was fed from nursing bottles. Lotions and ointments were not used on the breasts in conjunction with the breast shields. Neither infant received treatment with lead-containing plaster or dusting powder. Careful questioning failed to reveal any source suggestive of lead toys, inhalation of lead dust, lead impregnated clothing, or of lead foreign bodies in the stomach.

The clinical picture in both cases was that of vomiting, meningeal irritation and anemia. Clinically, these symptoms had no characteristics sufficiently distinctive to differentiate them from like symptoms in more common diseases. There was no clinical evidence that the vomiting in these cases was different from that seen in gastric indigestion; the nervous irritability clinically was indistinguishable from the meningeal irritation seen in other forms of meningitis and meningo-encephalitis; the anemia was identical, clinically, with anemias secondary to chronic disease and malnutrition. None of the manifestations in the classic lead triad were present—colic, palsy and the presence of a lead line in the gingival mucous membranes. This suggests that, in nursing infants, lead poisoning is probably too seldom considered as a diagnostic possibility when such common symptoms as vomiting, general nervousness and anemia constitute the clinical picture. The history of a source of lead, basophilic degeneration of the red blood cells, the changes in the spinal fluid, and the chemical detection of lead in the excreta were the most valuable aids and the final proofs in the diagnosis of lead poisoning in our cases.

The presence of lead in the feces of both patients demonstrates that lead in appreciable quantities may be ingested by infants suckling breasts which have been exposed to lead shields. The detection of lead in the urine in case 2 is absolute evidence that after ingestion from this source lead can be absorbed into the blood stream[10] and, in our cases, in sufficient amounts to affect the blood and to cause changes in the spinal fluid. These findings warrant the conclusion that lead poisoning in both patients was caused by the use of lead nipple shields.

Personal communication with obstetricians in New York testifies that the lead nipple shield is a commonly employed therapeutic measure in both dispensary and private practice. The duration of the use of the shields is usually less than one month, and a careful washing of the nipples previous to each nursing is advised. Under such conditions, there has been apparently no intoxication in the nurslings. In our cases the period of exposure to lead was several months—in case 1, three and a half months, and in case 2, six and a half months. The first mother was negligent in washing her nipples. The most important factors in the development of lead poisoning from the use of the shields are probably the length of exposure, the care of the nipples previous to nursing, the vigor of the sucking movements of the infant, and perhaps the individual susceptibility to lead which was noted by the Australian observers in older children.[11]

There is no indication in our cases that the use of lead shields for two or three weeks can cause lead intoxication. However, our cases do demonstrate that the lead nipple shield is a definite source of danger to the nursing infant if used for longer periods, and that, if the control of the mothers by the physician is not sufficient to insure the discontinuance of the shields after a few weeks, other therapeutic measures should be used in the treatment of the diseased nipples.

39 East Seventy-Fifth Street.

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[10] Aub, Fairhall, Minot and Resnikoff: Lead Poisoning, Medicine 4, nos. 1 and 2.

[11] Brinl and Young: Ann. Trop. Med 8: 575, 1914-1915.

Clinical Notes, Suggestions, and New Instruments

FIXATION OF FRACTURES OF THE CLAVICLE: ANOTHER METHOD

J. E. M. Thomson, M.D., Lincoln, Neb.

My object here is to describe a technic of applying fixation to fractures of the clavicle, using old and well tried principles, with especial reference to fractures of the outer third of the clavicle.

Most textbooks on fractures deal lightly with the possibilities and prognosis of fractures of the clavicle. Alinement and apposition, according to various writers, mean little to the ultimate outcome of the case. The primary object of all fixation is to hold the shoulder of the affected side well back and up. The T splint, cross or barrel stay application of fixation offers an excellent medium for holding these fragments. However, in my experience most of these fractures have been in men, and it has been extremely difficult to keep the splints in proper position. They demand constant attention and adjusting. In several instances, satisfactory position of the fragments has been lost to a certain extent by loosening of the bandages or straps during the first few days after their application.

It is true that fractures near the sternal articulation of the clavicle are not likely to cause any appreciable disability, provided the fragments do not injure the underlying soft tissues. However, our attention has been attracted to the severe shoulder disabilities resulting from fractures of the outer end of the clavicle, particularly those near the scapular articulation which have not been adequately reduced and immobilized. Such fractures are often seen complicated by dislocations of the head of the humerus, separations and dislocations of the acromioclavicular articulation, fractures of the scapula, and injuries of the glenoid cavity and shoulder joint. In my experience, nearly all fractures of the outer third of the clavicle are associated with injuries about the glenoid cavity, and there is always an abnormal mobility in the acromioclavicular articulation.

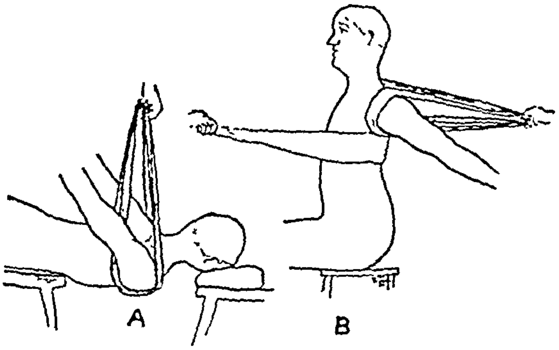


Fig. 1.—*A*, patient swung between two tables, muslin strips supporting the shoulders and held over head by assistant, the arms held well back and up; *B*, patient sitting, muslin straps over shoulders held from behind by assistant, countertraction maintained by muslin strap high up across back and held in front while the arms are held well back and up.

The common disability that results from the improper treatment of the latter type of fracture of the clavicle consists of painful abduction of the arm from the body, and limitation of movement forward of the humerus and backward when the patient attempts to put the arm behind him. Often very vigorous physiotherapy does not entirely relieve the symptoms, and permanent disability develops.

It has been my practice in the treatment of fractures of the clavicle to pad the shoulders and the axilla with the figure-of-eight sheet wadding bandage. The patient seated, if general anesthetic is not necessary, or on his face swung between two tables as illustrated, should an anesthetic be needed, with muslin bandages across the front of the shoulders and held from behind or above as the case may be, sitting or lying, the arms abducted up and backward.

When the patient is sitting, a counter traction is made by muslin bandages across the back up high and held by an assistant in front of the patient. However, when the patient is lying down the weight of the body is sufficient countertraction for ordinary reduction of the fracture.

After the sheet wadding bandage has been applied over both shoulders, a light plaster-of-paris figure-of-eight cast is applied to both shoulders and about the chest. This can be cut out considerably without weakening the fixing power of the cast.

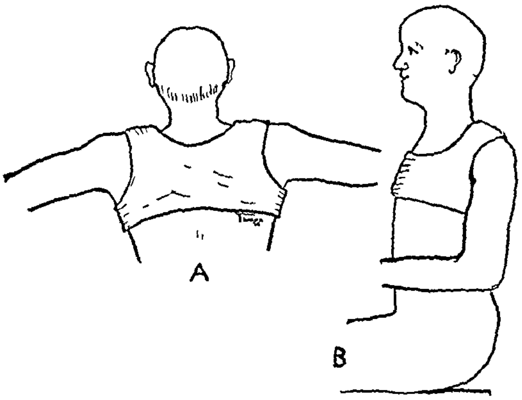


Fig. 2.—Figure of eight cast applied. *A*, seen from rear, *B*, from side.

When the fracture of the clavicle is in the outer third, the plaster-of-paris cast is extended down over the chest, embracing the entire trunk. The arm on the affected side is held well back and embedded in the plaster, forming a body and arm spica with the arm at 90 degrees of abduction, with the body and forearm flexed to an angle of 90 degrees with the arm and in the same plane, held in supination, the hand in dorsiflexion.

In the figure-of-eight plaster cast the patient has full freedom of the arms without jeopardizing the possibility of losing the position of the fragments. If the fragments are not in sufficiently satisfactory alinement, through an opening in the cast, direct leverage of the fragments with a small instrument can be accomplished to bring the desired position, or open operation if deemed necessary may be performed. Such procedures, however, are seldom necessary.

At the end of four weeks the cast is removed, and a muslin bandage reenforced with adhesive plaster will often be enough immobilization until the patient is ready to be relieved from all fixation devices.

In those cases in which the fracture is of the outer end of the clavicle, the arm and the body are placed in a spica. The upper part of the arm cast is removed at the end of two and one-half weeks, and massage, manipulation and physiotherapy are instituted for the arm and shoulder joint, the arm always being left in the well abducted position. At the end of four weeks the entire cast is removed and physiotherapy is continued, the muslin bandage reenforced with adhesive plaster being the only limiting feature to the shoulder region for another week or so.

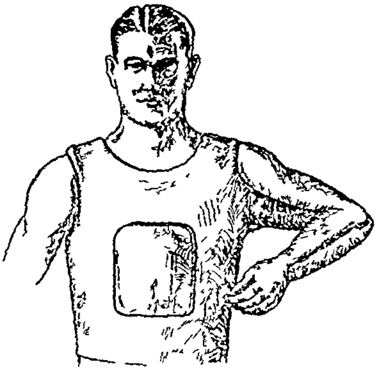


Fig. 3.—Body and arm spica used in cases of fracture of the clavicle in the outer third with injury to the shoulder joint, the top portion of the arm cast has been taken off, that physiotherapy may be instituted.

When this method is followed, the shoulder joint has an opportunity to heal as well as the fracture fragments, and there is not the long period of painful shoulder disabilities that are found so often in cases referred to us after having been treated by other methods of fixation.

I have had one patient who was a football player and who, after the second week in his figure-of-eight plaster cast, continued the major part of his practice and was used after the third week in a game without injury to the position of the fragments; but such strenuous testing of the fates is not desirable, even in a cast.

223 First National Bank Building

BILATERAL GONORRHEAL SALPINGITIS IN A CHILD THREE DAYS AFTER INITIAL INFECTION

Minas Joannides, M.D., Chicago

This case is reported because it presents the following important features: A girl, aged 6½ years, was infected innocently by a careless mother; the disease spread into the tubes and the pelvic peritoneum within three days after the initial infection, and the child recovered after double salpingectomy and appendectomy with drainage.

The child was living at home when the mother was infected with gonorrheal vaginitis and endocervitis. Although the mother was warned against careless handling of her three girls and two boys, ranging between the ages of 3 and 10 years, this child did not escape. She had a strong desire to urinate when at school, but the teacher did not allow her to go out of the room, with the consequent result that she soiled herself. Ever since babyhood, she had had poor control of her bladder sphincter. On going home she was cleaned by the mother, who had just previously taken a local treatment at home and forgot to use an antiseptic for her hands. On the following day the girl noticed a discharge from the vagina, but the mother paid no attention to it. Two days later the girl became very sick, with fever ranging at the level of 103 F. There were vomiting, pain in the abdomen, and a very profuse vaginal discharge.

When seen, the child had bilateral rigidity in both lower quadrants, there being more rigidity on the right side and over the appendix. She had severe nausea and vomiting. There was a thick purulent vaginal and urethral discharge. The pulse ranged between 140 and 160 a minute. She was immediately taken to the Deaconess Hospital in Minneapolis, where she was placed in the Fowler position, with cold applications over the lower part of the abdomen. During the night the child's pulse began to get thready, and the temperature persisted at its previous high level. By 5 o'clock the next morning, the child was moribund, and in order to lessen the responsibility on myself, Dr. C. A. Witham was also called to see her. He concurred with my decision for immediate laparotomy, in spite of her critical condition. Under ether anesthesia, a midline incision was made from the pubis to the umbilicus. On opening the abdomen, I noticed some serous fluid in the pelvis but no tendency to any adhesive reaction as yet. The peritoneum as well as the uterus and tubes and also the appendix presented a fiery red injection, as if there was a beginning gangrene of the organs. There were no adhesions between the appendix and the neighboring viscera. There was a thin purulent discharge that could be squeezed out of the tubes when the latter were handled. Both the tubes were removed, along with the appendix. The ovaries were not sacrificed in the hope that, though involved, they might offer more help by their internal secretion than harm by their inflammation. A hurried closure was made after ample drainage had been established.

The child had a stormy postoperative course for the first two days, but by the third day the temperature had dropped to 99.8 F., and remained along that level until she was discharged from the hospital seventeen days after operation. There was a profuse discharge of pus from the wound, which was irrigated daily with mercurochrome-220 soluble (2 per cent watery solution). Vaginal instillations were given also twice daily. No sinus was present four weeks after the operation, although there was a small granulating wound about 25 mm. in diameter at the time when last seen. The vaginal discharge became minimal, but the instillations of mercurochrome solution were continued daily till the child had no more discharge. Fortunately, the rest of the children were normal on repeated examinations.

The lessons from this case are clear: We must emphasize to the infected parents the dangers of infection in the children. With the removal of the tubes and the infected appendix, it was easy to cure the child by establishing ample drainage and giving antiseptic therapy.

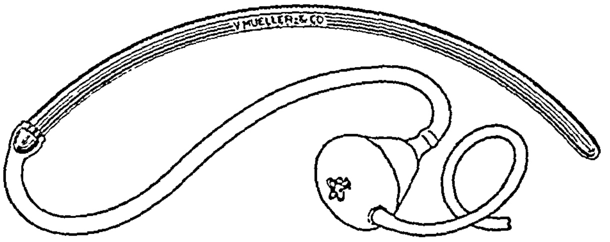
3741 Broadway.

A NEW INSTRUMENT FOR THE INTRODUCTION OF HEMOSTATIC BAGS IN SUPRAPUBIC PROSTATECTOMY

E. O. Swartz, M.D., Cincinnati
Attending Urologist, Cincinnati General Hospital and Jewish Hospital

The control of hemorrhage following the removal of a prostatic adenoma by either the perineal or the suprapubic approach is the anxious concern of every operator. The popularity of the hemostatic bags of either the Hagner or Pilcher model attests their effectiveness. The use of these bags is almost entirely confined to those who remove the prostatic obstruction suprapubically.

The bladder is opened by median section, the adenoma removed by blunt dissection. A special sound with a Benique curve and a notched tip is then introduced through the urethra into the bladder and the bag threaded onto the tip of the sound. The rubber may or may not be held to the sound by means of a ligature. The sound is then slowly withdrawn through the urethra, pulling the bag down into the cavity left by the removal of the adenoma. The bag is inflated with fluid or air and held in place by means of adhesive plaster.



Sound for the retrograde introduction of a hemostatic bag into the prostatic cavity, with a Pilcher bag fastened to it.

This is about the method used in most cases. We have at times experienced considerable difficulty in maintaining a rigid aseptic technic during the introduction of the sound through the urethra. We have also felt that the passage of the sound through the urethra, which is seldom sterile, into the raw cavity from which the prostatic adenoma was removed may be the means of introducing fresh infection into the denuded area in the bladder and prostatic urethra. To overcome these objections and facilitate the introduction of the various types of hemostatic bags, the special sound here presented was designed. A number of different shapes, curves and sizes were tried out before one was found to be satisfactory.

The instrument is a one-fourth segment of the diameter of a circle about 14 inches in diameter. In calliber it is a no. 23 F. with a special tip no. 17 F. over which the bag is threaded. The opposite end is rounded and tapered for ease of introduction into the urethra. After the enucleation of the prostatic obstruction, the bag is threaded on the tip and the rounded opposite end of the sound inserted through the bladder and the prostatic cavity into the urethra. The sound is pushed on through the urethra and out the meatus, carrying the bag into the prostatic cavity. Occasionally the procedure is varied by introducing the sound into the urethra retrograde from the bladder, and while it is in place enucleating the prostate from around it.

By either of these methods the unsurgical procedure of introducing a sound through the urethra into the raw prostatic cavity is done away with and the danger of infection lessened.

The instrument was made by V. Mueller & Company after a number of experimental models were tried out.

By the use of this sound retrograde we have been able to maintain a better aseptic technic and introduce the bag with greater facility than by the use of the older type sound.

The Doctors Building.

Special Articles

RELIGIOUS HEALING

PRELIMINARY REPORT *

ALICE E. PAULSEN, Ph.D.
NEW YORK

In ancient times the practice of healing was carried on by the priesthood. It was a recognized function of religious procedure, and history supplies us with amusing accounts of the queer charms, incantations and magical practices of every conceivable sort that were part of the stock in trade of the healers of those days. Such practices survive to this day among primitive peoples.

Though the early Egyptians had some knowledge of anatomy and must have known something about hygienic methods, the separation of medicine from religion and magic did not occur until the fourth century before Christ. Hippocrates, the father of modern medicine, was a product of the comparatively highly cultured Greek civilization, which made bodily perfection and health ideals in themselves.

Modern medicine itself has gone through endless changes. When we think of the numberless remedies that have been heralded, assiduously applied and later proved worthless, in spite of their one-time reputability and popularity, we are sometimes forced to the conclusion that in the history of medicine there have been many practices, which, whatever they accomplished or failed to accomplish, must have worked through suggestion and not through any intrinsic therapeutic value. They take their place with magic. Nevertheless, the steady increase in the body of medical knowledge has tended to separate medicine further and further from religion, until at the present time we are scarcely able to trace the earlier close connection.

Psychotherapy is demonstrating the need for a more thoughtful consideration of Plato's ideal "mens sana in corpore sano" in the treatment of all disease conditions, and in a general way the interrelation of mind and body is recognized. But with regard to religion, a most vital aspect of mental life, opinion is decidedly divided.

A part of this particular study included gathering opinion, from a more or less unselected group of physicians, concerning the value of religion as a therapeutic agent as judged by their experience with it in practice. Comparatively few had found it practical or had had sufficient experience to warrant expressing an opinion. Of those who had had experience with it, some reported favorably, some unfavorably. The same was true in the case of those who expressed opinions on the basis of a theoretical consideration of the question.

Yet Plato's "mens sana" apparently meant something more than a "sound mind" as it is commonly translated, and as psychotherapy ordinarily interprets it. He[1] says: "The office of the physician extends equally to the purification of mind and body. To neglect the one is to expose the other to evident peril. It is not only the body which, by sound constitution strengthens the *soul*, but the well regulated *soul*, by its authoritative power, maintains the body in perfect health."

Today, medicine freed from the church appears to have left the care of this much disputed soul of man to the care of theology. Theology on its part has made little of the body. As a matter of fact, for about 1,500 years the church and its authorities were a hindrance to the progress of science in general. Christ emphasized healing of the body in his ministry, but, during the middle ages especially, his followers became so perverted in their thought that they brought about untold damage to the healing art, at a most important period of its development, through their tragic undervaluation of bodily welfare and overestimation of spiritual values.

The church, however, has gone through radical changes since that time. There are those who believe that even now it is experiencing a sort of continuous and gradual revolution, destined to emerge with a reversal of its former attitude toward science. Instead of looking on it as a rival, the church is beginning to welcome science as an ally and is seeking its aid in solving the problems that confront organized religion today.

Science, on the other hand, is said to be becoming less material, less convinced that the universe can ultimately be explained in terms of matter, and more ready to enter speculative fields.

As problems become mutual, all tend to meet in the course of their search for truth. And so it is with medicine and religion in relation to the present problem. We are not concerned with the differences between religion and science, the science or art of medicine in particular, but with what each can contribute to an impartial investigation of a mutual problem, namely, the relation of religion and health, as demonstrated in certain modern religious-therapeutic practices.

In order to comprehend the situation fully it is necessary first to consider the theories and practices involved in the activities of certain cults, not within the church, which include healing in their purpose and give their systems a religious setting.

Then we must consider the work of individuals and institutions not especially organized for religious work but making religion an essential element in the methods they use to readjust patients of various types who are under their care for that purpose.

We come finally to a consideration of work within the churches. This includes organized efforts to introduce healing as a function of religion, less direct efforts at religious therapy on the part of individual members of the clergy, and certain types of medical work carried on in established relationships between clergymen and physicians. To complete the picture, we call attention also to health work along more ordinary lines and the general facilities available for health work in churches.

The problem is of such complexity that it will be fully comprehended only through a most intensive study carried on with mutual understanding, mutual cooperation and mutual desire to solve the questions involved. This is a matter for the future. Under the circumstances, the present study constitutes only a preliminary survey of the field, and my purpose in this paper is merely to indicate the scope of the problem, to formulate conclusions so far as conclusions can be formulated at this stage, and to present what material I have been able to glean, as a basis for the formation of adequate plans for a more adequate investigation of the entire situation. Subsequent papers will report the results of further study.

The survey has served to establish the fact that the problem is very great and that it will repay further investigation both because of its possibilities for good and on account of the obvious necessity of preventing evil developments. Since the movement is world wide, it was necessary to localize this particular survey in order to make it practical. It has therefore been confined largely to movements that have active centers in New York. A perusal of the literature on the subject will readily verify the fact that what is reported here is typical of what may be found throughout the country.

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* Prepared under the auspices of the Committee on Public Health Relations of the New York Academy of Medicine.

[1] Plato, quoted by Atkins, G. G: Modern Religious Cults and Movements, New York, Fleming H. Revell Company, 1923, p. 98.

Its importance may be judged from the fact that the Church of England, after a study of the problems presented by the religious healing movement, carried on over a period of three years, has appointed a permanent committee of prominent physicians, clergymen and psychologists to act in an advisory capacity to the church with regard to the matter, and in America the Episcopal Church has also appointed an advisory committee consisting of physicians, clergymen and laymen. There is no doubt that the movement is on, and on in earnest.

INDEPENDENT MOVEMENTS

CHRISTIAN SCIENCE

The most highly organized modern "faith cure" movement is admittedly Christian Science. This cult is said to comprise about 1,500,000 members. According to the statistics published in the *Christian Science Sentinel*[2] following the annual convention of the Christian Science church in June, 1925, the work founded by Mrs. Mary Baker G. Eddy, about 1870, is now being carried on by 7,220 recognized practitioners. Efforts are being made to secure nurses who will pledge themselves to faithful cooperation with practitioners, and there are now 216 on register. In the course of the year, 1,600 patients were treated at the newly established Christian Science sanatorium.

During the year, 3,257 public lectures on the teachings of Christian Science were given. Of these, 312 were given in foreign fields. The total public attendance at these lectures was 2,580,160 people.

The yearly receipts of the mother church were $1,075,496.33. Besides this there were gifts to the "special fund" amounting to $468,218.89; to the "relief fund," $202,103.07; to the "benevolent fund," $430,384.98, and to the "permanent fund," $17,868.08. So firmly is this movement established, both financially and in numbers, that its authorities were able to obtain property for it in the vicinity of the mother church in Boston valued at $1,305,755.47 with only $200,000 invested in cash.

Christian Science is primarily occupied with the problem of treatment. Students of philosophy and of religion harshly criticize the philosophical and religious setting which has been given to Mrs. Eddy's theories and do not recognize Christian Science either as a philosophy or as a religion.

In 1862, Mrs. Eddy, a confirmed neuropath,[3] who had been a more or less helpless invalid since her early childhood, went to Portland, Maine, to consult one Phineas Parkhurst Quimby, who, though only a watchmaker by trade, had built up a rather elaborate "mind cure" based on the theories held by the French "animal magnetists" of that time. Quimby's interest in these matters was aroused by the lectures and teachings of a magnetizer named Charles Poyen, who visited the United States about 1840.

After a few treatments by "Dr." Quimby, Mrs. Eddy appeared to be completely well. She was convinced that he had cured her of paralysis which, she believed, had been due to a lesion of the spinal cord. Following her cure she devoted herself to the study of Quimby's methods and teachings, and Christian Science is the outcome of her study. Her first publication was copyrighted in 1870, and in 1875 she published "Science and Health," which contains the authoritative creed of the organization. "Science and Health with Key to the Scriptures" is the complete title of this book as it now appears. Mrs. Eddy devoted the rest of her life, until her death in 1910, to the advancement of Christian Science through her writings.

Certain other students of Quimby accused the founder of Christian Science of having deliberately stolen the material for her own publications from some of their teacher's unpublished manuscripts with which she was familiar. These, like Mrs. Eddy's, were curious mixtures of ideas gleaned from the Scriptures, spiritualism, clairvoyance, treatises on disease, happiness, wisdom, science and the arts. Mrs. Eddy indignantly denied any plagiarism, and, apparently quite unmindful of the now accepted theories concerning such phenomena, claimed that her work was more than original in that it was accomplished by divine inspiration, some of it produced by automatic writing.

The main tenets of her teachings are to be found in "Science and Health with Key to the Scriptures." The basic maxims are:[4]

1. God is All-in-all.
2. God is good. Good is Mind.
3. God, Spirit, being all, nothing is matter.

To the Christian Scientist, "matter is nothing beyond an image of mortal mind." "Disease, death, evil, sin deny good, omnipotent God, Life." Nothing is real and eternal, nothing is Spirit, but God and His idea. "Evil has no reality . . . it is simply a belief, an illusion of material sense."[5] Sickness is "error."

The "scientist" treats himself with these thoughts. He believes that pessimism leads to weakness, optimism to power. If he is ill, his self-treatment consists in dwelling on those parts of Mrs. Eddy's teachings which are appropriate for his condition, devoting his entire conscious activity or passively giving himself up to steadfast denial of the reality of the "error" to which he may temporarily be subjected. This is varied with prayer, audibly expressed or silent, and affirmations of goodness.

If unable to treat himself, he calls on a practitioner, who may help him either by absent or personal treatment. Absent treatment does not require that the practitioner shall see the patient. He may be appraised of the patient's need by telephone, telegraph or other communication, and carries on treatment wherever he may be. Some practitioners and some patients state that they are so *en rapport* that no material communication is necessary to appraise the practitioner of the patient's need, and the patient as through telepathy becomes aware that the practitioner is meeting his need. The patient need merely place himself in a receptive attitude, and healing will follow as a matter of course.

When the practitioner treats a patient in person, efforts are made first to bring about the proper attitude of mind in each. The practitioner directs his efforts toward placing the patient *en rapport* with and under the control of the Divine Mind. All else must be banished from his mind. The patient must relax and banish all fear and misgiving, expect to be healed and maintain a passive receptive attitude.

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[2] Christian Science Sentinel, June 13, 1925.

[3] Janet, Pierre: Psychological Healing, translated by Eden and Cedar Paul, New York, the Macmillan Company 1:55 ff., 1925.

[4] Science and Health, p. 113, lines 16, 17 and 18.

[5] Quotations from Science and Health with Key to the Scriptures.

This attitude is brought about largely by persuasion in the case of new patients, but the adept is trained to assume it with little difficulty. Treatment proper consists of reading or quoting suitable passages from Mrs. Eddy's writings, meditations, repeated denial of the reality of the patient's symptoms if he is being treated for health, with affirmations of health, perfection, goodness and suitable prayers. The treatment may be silent, audible or partly silent and partly audible, and may vary in length of time from a few moments to several hours The fee for service is as a rule on the basis of free will offering, with a tacit understanding that it shall be in proportion to the patient's means and the service rendered.

No medical help is permitted beyond attention to ordinary hygienic measures, and in her earlier teachings Mrs Eddy deliberately enjoined against even these A practitioner is not permitted to treat a case unless the patient has chosen between his ministrations and those of the medical practitioner. Most practitioners demand that the patient himself shall desire and ask for his services, but some still consent to attempt winning the individual at the request of others interested in him, however resistive the patient himself may be at first

For no ailment is definite diagnosis previous to treatment considered necessary, nor is evidence of cure demanded beyond the patient's testimony. To avoid difficulty from the legal point of view, a physician is called in if death appears imminent. Christian Science practitioners are not required to have medical training, nor is there an academic requirement of any sort, beyond the acquisition of certain foundations in the technic of Christian Science treatment and personal qualifications satisfactory to the Christian Science authorities, by which they are officially recognized.

The Christian Scientist places great emphasis on the effect of suggestion in general. He has an almost superstitious abhorrence of any negative thought, making a practice of banishing at once every idea of disease, misfortune, unhappiness or "error" of any sort. He does not wish people even to mention them in his presence He endeavors to create for himself a cheerful, pleasant, happy environment and to think only positive, constructive thoughts. The practitioner makes a point of demanding a cheerful atmosphere and the creation of "harmony" in the sickroom

Besides attending their regular church services on Sunday, treating themselves or taking treatment from practitioners when in "error" of one kind or another, attending midweek experience meetings at which they may bear public witness to the help they have received through the application of Christian Science in the pursuit of health, wealth and happiness, the followers of Mrs Eddy, if they are faithful, spend time in the daily study of her "word." A daily lesson based on the study of Science and Health with Key to the Scriptures is provided for this purpose.

A well organized bureau supervises the publication of Christian Science literature. Lectures and other publicity are carefully planned Two publications edited with Christian Science principles in mind, the *Christian Science Monitor,* a daily newspaper, regarded by many as one of the best dailies in the country, and a weekly, the *Christian Science Sentinel,* have a wide circulation among the general public

JEWISH SCIENCE

Similar to Christian Science, but of more recent origin, is Jewish Science,[6] *founded by Rabbi Morris Lichtenstein* New York has several active Jewish Science centers, including a prayer clinic

"Jewish Science prayers," says Rabbi Lichtenstein, in "Jewish Science and Health," "are always answered " Further quotations from the same source make clear the similarity between this cult and others of the same nature The methods advocated are typical.

How to Pray —"The Divine Mind communicates with the human mind through the imagination. . . .

"A prayer therefore should be offered in the form of a mental image Man must visualize the thing he desires, he must use his imaginative powers to form his petition in terms clearly outlined in his own mind The profound concentration of attention and thought which this form of prayer requires fills also the heart with deep earnestness and devotion Man must pray whole heartedly as well as whole mindedly; he must believe in his heart that his well being depends completely upon his prayer

"In these mental prayers there should never be formed any negative images . . one should see with his mental vision only the state in which he desires to be he must keep the image alive and fresh, which means that this image prayer must be frequently repeated, each time with greater clearness and with deeper devotion The mind . must be free from doubt and hesitation and should sincerely expect a response to its supplication. The answer will not fail to come

"One must first of all put himself into a calm state of mind . . must free himself of all distressing thought and unpleasant feeling . . become serene and thus attuned to the Divine Mind Serenity cannot be achieved without bodily relaxation. Therefore one should relax completely, put himself perfectly at ease, feel no discomfort, then close his eyes and offer his prayer with the imagination Gradually and with concentrated effort, the mind will succeed in presenting its prayer

"Should the petitioner find himself unable to visualize his supplication, he may bring words to his assistance and offer his petition in the form of an affirmation An affirmation is a prayer offered to the Divine Mind in affirmative terms When one suffers from unhappiness, he affirms.

" 'The Divine Mind in me expresses itself in happiness ' When one is steeped in despondency he affirms 'I am filled with Divine hope and cheer ' *In this as in* the other method of prayer—that of the mental image—the mind of the supplicant must be attuned to the mood of the Divine Mind . . .

"In both methods of prayer, the visualized and the affirmative, the supplicant must realize fully that he is declaring his desires to the Divine Mind and that his prayer will always be fulfilled. . . ."

Healing —"The greatest gift in man's possession is health . . . Because health is natural to man he need not exert himself to attain it; he need have only a care to preserve it. Health can best be preserved and life prolonged by following faithfully the precepts of Jewish Science We say 'Live serenely . . . avoid unwholesome excitement . . . live peacefully, and avoid anger . . . live cheerfully, avoid moroseness . . . be contented, avoid envy . . . love every one, hate no one . . . be hopeful, courageous, never worry, never fear . . . above all trust God at all times . . . wholeheartedly . . . with all your soul . . . your might . . . and you will come to know that your life is inherently a part of his essence and that your mind, therefore, is not made to be a harbor of destructive influence, nor your body a place of refuge for pain and suffering. . . .'"

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[6] Lichtenstein, Morris Jewish Science and Health, New York, Jewish Science Publishing Company, 1925

A prayer for health is offered in a manner akin to the prayer offered for any other need . . . consists of two parts: first, the visualization of divine giving and then of man's receiving; first, the process of healing; second, the state of health restored through that process.

"If any particular organ of the body is affected, the affirmation must declare that health is saturating it, obliterating all defection and suffering. . . . If the heart is affected . . . affirm 'the stream of Divine Health is flowing into my heart, filling it with abundant health. . . .' This formula may be modified to be applied also when the ailment is in the lungs, digestive organs, liver, kidneys . . . any part of the body, care being taken to name the given part distinctly. As in all prayer, relaxation, freedom from strain and distraction is cautioned. The author further directs, 'Repeat the affirmation a number of times, slowly, without the urge of making many repetitions, but rather with concentration and emphasis on each word.'" The prayer should occupy about fifteen minutes.

Directions are also given for prayers for others, with the patient either present or absent.

"The method of praying for others is akin to that of praying for oneself. Both the ailing and the one who prays enter into deep silence. They both relax completely, eliminating all tension from body and mind. They both close their eyes; but while the mind of the patient becomes perfectly passive and inactive, that of the supplicant becomes awake and active. He must visualize the patient as the recipient of God's blessing." This prayer should also last fifteen minutes.

"A prayer for help may be offered either in the presence or absence of the ailing and distressed . . . it is essential that the prayer in the absence of the ailing should be offered in the same manner and with the same devotion as a prayer offered in his presence . . . first visualize him as present . . . seated opposite . . . relaxed . . . have a clear impression of his appearance . . . having previously obtained knowledge of his abode, name, approximate age . . . general appearance . . . and if possible procure a likeness. The necessary part of the absent prayer is the identification of the one prayer for . . . mention name and location at outset of petition. It is best that the ailing one should be aware of the fact that some one is offering prayer for his restoration . . . more advantageous that he be informed of exact hour that prayer is to be offered and that during that period he close his eyes and place himself in a state of perfect ease and relaxation . . . think of Divine Healing permeating him, restoring to perfect health."

"After each prayer," the author states, "definite changes for the better will take place in his condition; pain will become less intense each time, strength will supplant weakness, hope will replace despondency, and well being will be regained."

NEW THOUGHT

As a matter of fact, the term New Thought covers the teachings of all the modern healing cults, including Christian Science, Jewish Science and those still to be discussed. Moreover, the "thought" is as old as philosophy itself. Its modern advocates differ only in the manner in which their systems present it. As the systems become more highly organized, they tend to form separate cults and to work more or less independently, although many, if they qualify, become members in some such organization as the International New Thought Alliance or other centralizing agency. However, none of the other New Thought movements are as unified as Christian Science, a product of the same parent stem.

The entire movement in this country may be traced to the revival of transcendentalism which took place in New England in the early part of the nineteenth century. Contemporary thought at that time went through an upheaval under the influence of a keen interest in Neo-Platonism, with its attendant renewal of interest in mysticism, idealism and particularly the idea of an immanent God.

In 1830 there was formed a rather loosely organized "Transcendental Movement" largely composed of the followers of such writers as Emerson, Channing, Ripley, Margaret Fuller, Brownson and Hedge. Emerson's essay on the "Over Soul" gives the essence of this movement, a combination of the influence of the Orient and ancient Greece.

This has been passed on to New Thought, and to it has been added the influence of the so-called "New Psychology,"[7] which is differentiated from modern empiric psychology by its comparative lack of scientific method and its interest in transcendentalism, which the latter has left practically untouched.

Modern New Thought is also influenced by the doctrines of Theosophy concerning reincarnation, telepathy and the like.

The fundamental principle underlying all New Thought ideas is that "there exists an infinite and eternal spiritual Principle of Being"[8] to which are attributed the qualities of "omnipotence, omniscience, omnipresence."

"This Principle of Being is regarded as Pure Spirit . . . the essence of Spirit being Mind. . . . The Principle of Being is spoken of as Universal Mind. Its substance is regarded as Mental Substance. Its power is regarded as Mental Power. From this arises the statement that 'All is Mind,' including the manifestations, emanation or expression of Mind."

Furthermore, "This principle of Being is held to be One and one only. There being nothing in existence other than this One Principle, the universe must be regarded as necessarily an emanation, manifestation or expression of the One Principle of Being. There is nothing else for us to be. Moreover, the One Principle of Being must be immanent in everything, in different degrees of expression and manifestation."

Thus, if we are ill, unhappy, unsuccessful, it is because we are not manifesting this "Power Within," and it behooves us to take steps to put ourselves "in tune with the Infinite." This may be accomplished according to some New Thought teachers by simply relaxing, thus removing the inhibitions from the flow of energy stored in the mind. Others believe that the mind is influenced by the Infinite Mind and, by making it receptive, energy from without flows in to satisfy whatever need is present. Some compare the individual mind to a radio instrument. Its function is to receive energy radiating from the Divine Mind. Tuning in is a process of controlling the vibration rate of the receiving instrument that it may pick up the vibrations from the Infinite.

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[7] This should not be confused with the term "New Psychology" as used in more scientific circles. It is doubtful whether the more popular form has any right to the name.

[8] Atkinson, W. W.: History and Principles of New Thought. Holyoke, Mass., Elizabeth Towne Publishing Company.

Practically all are agreed that the "subconscious mind" is either the storehouse of infinite energy or the instrument which must be manipulated in order that the individual may manifest the qualities of the Infinite Spirit of which he is but an emanation. Proceeding on this theory, innumerable methods of developing, stimulating or releasing the forces of the subconscious mind, as well as methods of tuning in with the Infinite for one purpose or another, are proposed. Thus, we find teachers giving lectures followed by private courses and individual instruction in such things as "Concentration," "Relaxation," "How to Manifest," "How to Demonstrate," "Releasing the Forces of the Subconscious Mind," "How to Visualize," "How to get Anything you Want," "How to Stop Worrying," and "How to Succeed."

Treatment varies with the school and may consist of relaxation with the realization of the desired end in mind, verbal treatment with New Thought principles, as expressed by various New Thought writers, or passages from the Scriptures, meditation, visualization of the desired end as recommended in the case of Jewish Science prayers, active or passive repetition with attention wholly concentrated on certain New Thought formulas, such as in case one wishes to manifest health, "I am Well!" "I am Strong!" Prayer of the affirmative type also has an important place.

Music, rhythmic exercises, special types of voice culture, "vitalic" breathing, cultivation of one's special talents in order to better express oneself all have their advocates, each professing to have a special influence over the latent powers that need only be released to emancipate the spirit of man. This is sought to the end that one may manifest more abundantly.

The New Thought student is thoroughly convinced of the influence of mind and he therefore "guards the portals" and, like the Christian Scientist, allows only constructive thoughts to enter. By exercising what he terms his will and imaging faculties, he believes that he can accomplish anything he desires to accomplish. The capacity is either within him and need only be released; or, if he believes that it comes from without, he feels that he need only place himself in the proper attitude of mind to receive it. The main point to him is that it is possible to him if he will but believe it, relax and permit demonstration to take place.

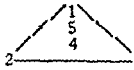
Relaxation in the case of treatment may involve a comparatively simple process consisting of substituting a calm state of mind for a more active one and placing the body in a resting position, or it may advance through the numerous states of lowered tension, varying from mere resting to a condition suggestive at least of a deep autohypnosis.

There are some New Thought centers in which the teaching includes elements of mysticism. The mystics make a practice of entering the silence, communing with the "cosmic mind," etc. In this state, which is described by them as a "superconscious" rather than an "unconscious" or a "subconscious" state, the mystic seeks to draw near to the source of all power, and through his contact to become imbued with its qualities. He believes that it makes him more powerful, wiser and less restricted by the limitations of time and space. In this state he has a "feeling of the presence" of God or the Infinite Power, and he returns to a conscious state with a sense of renewed energy which he believes he has gained from his contact with a higher consciousness than his own. In order to be worthy of this communion, he must live a holy life; and it is in respect to what constitutes this, as well as in the methods they advocate for "entering the silence," that teachers vary.

We have in New York an active Vedanta society, a Sufi center, teachers of the Yogi philosophy and various modifications of these and other similar systems.

One of the methods of entering the silence for the realization of anything, including health, as taught by Premel el Adaras, president of the Society of Transcendent Science, is as follows:

> Taking three candles, place them in the shape of a triangle thus:



> Now take a crystal (each individual requires a special crystal, according to his date of birth) and place it at 4. Next place some incense (this also must be individual) at 5.
>
> Have no other light except the candles and the glow of the burning incense. Sit with limbs folded as in the position indicated in likenesses of Buddha. Hold the arms rigidly flexed, forearms parallel with chest, hands outspread. Roll the tongue up and place it against the upper front teeth. Hold mouth shut, teeth one-eighth inch apart. This is to insure passing above the hypnotic into the "superconscious" state. Close the eyes. Now maintain this position until the hands are numb. Then look in the crystal and you will see yourself as you want to be, well, successful, happy or whatever your desire may be. After repeating this process for seven nights you will have tuned your mind in on Health, Wealth, Happiness, or whatever you desire. From thenceforth you need but relax and you will be attracted naturally to the desired end.

A variation of this treatment for health is to proceed with candles, crystal and incense as directed above.

> Instead of squatting on the floor or before the table on which they are placed, lie down totally relaxed on your bed. Drone slowly and distinctly until you fall asleep, the words Om, Mane, Padme, Hum, Om, Oum, taking care to allow the "m" sound to resound and cause a buzzing sensation directly above the nose. This will remove all symptoms and the patient will awaken refreshed and quite well.

This procedure is extreme, and less radical New Thought teaching does not as a rule promulgate such methods. Relaxation, however, figures largely in all treatments, and the use of formulas to be repeated under concentrated attention is an important element. Curing disease also is an active part of the work.

Although they do not assume the authority of parting the patient from his physician as do Christian Science practitioners, New Thought practitioners state that the patient is soon convinced of the greater efficacy of the new method and leaves his "crutches," i. e., medicine, eye-glasses if he wears them, etc., behind. It becomes quite unnecessary for the New Thought student to consult a physician. He feels that doing so interferes with his progress in his ability to help himself, or to be helped by New Thought, because it raises doubt in his mind.

At the last annual convention of the International New Thought Alliance, 10,000 persons were present. It is not possible, however, to obtain a reliable estimate of the large number of people connected with the New

Thought movement because it is so widely scattered. It has centers of one kind or another throughout the world. Its literature is very extensive. Ralph Waldo Trine's book, "In Tune with the Infinite," one of the best known New Thought books, has already been through 700 editions. The teachings are promulgated through magazines with wide circulation, lectures apparently always well attended, private courses, and individual instruction. Treatments are given by practitioners who are as a rule also teachers and lecturers. Meetings are for the most part held in hotel parlors or lecture halls. There are as yet no organized New Thought churches, housed in church edifices of their own.

Prominent among New Thought writers are Ralph Waldo Trine, Elizabeth and William Towne, Charles G. Leland, H. Emilie Cody, Kate Boehme, George Warton James, Gertrude Bradford and William Walker Atkinson, and there are others too numerous to mention. The literature includes almost every topic of successful living, with titles such as "How to Remake Yourself," "How to Cure Yourself," "Lessons on Truth," "You and Your Forces," "Worry, Hurry Cured," "Your Will Power, How to Develop It," and "Health and Wealth from Within."

DIVINE SCIENCE

Strictly speaking, while merely another type of New Thought, Divine Science stands out by itself. Its teaching is somewhat less complex, although there is a tendency for Divine healers to build up systems which are more or less individual and dependent on their personal convictions. The fundamental teachings are comparatively simple.

1. God is good and wishes only good for his creatures.
2. Disease, unhappiness, misfortune are of man's own making.
3. God will cure man and show him how to overcome all difficulties if man will but follow God, believing in his omniscence, omnipotence and omnipresence.

Treatment of a sufferer consists in persuading the individual of these facts, especially of raising in him the belief that God will cure him if he asks him to do so. This may be accomplished through conversation or reading of appropriate Scripture passages. When faith has been firmly established, the patient's state of expectancy is further enhanced by earnest prayer of an affirmative nature. This is not attempted until relaxation has been accomplished, nor until full cooperation on the part of the patient has been secured. Prayer is usually followed by "laying on of hands." This consists of placing the hands on the head of the patient.

To certain healers who believe themselves imbued with magnetic powers, this is a most important part of the treatment and must be carried out by a more or less elaborate technic with regard to position of the hands and attitude of the healer, in order that the flow of power from healer to patient may be facilitated. Others ridicule this idea.

New York has seen many such Divine healers, notable among them Francis Schlatter, Bradley Newell, John Alexander Dowie, and more recently James Moore Hickson. The Middle West still has several settlements established by Dowie. In New York are three active centers carrying on the work founded about 1919 by the late John Murray.

The followers of Murray believe that the mind forms the patterns for conditions in the physical body, and they guard their thoughts accordingly. They try to follow the teachings of Christ as interpreted by the founder of Divine Science, as the movement is known. In this way, they learn to think rightly and their welfare is accordingly influenced. They believe that they can dispense with medical help.

Those who have followed Mr. Murray in the leadership of the movement continue to teach and to heal. Besides work with individuals, they carry on daily public healing services. These consist of a short address by the leader, including a discussion of some appropriate Bible text, prayer and a "treatment." The leader reads or recites a given passage from the Scriptures or from Mr. Murray's writings, while the listeners close their eyes and relax. This is usually followed by affirmative prayer. The work is supported by free will offerings and the sale of Mr. Murray's numerous writings. These meetings are well attended, and the movement has hundreds of loyal, enthusiastic followers. The mention of Murray's name in other New Thought audiences frequently brings out considerable applause.

The best known Divine healer at present in this country is probably Mrs. Amy McPherson, who conducts services of a revivalistic nature and also does individual work. She is reputed as unusually successful in bringing relief to all kinds of sufferers, and is so popular that her followers have recently erected a large temple for her in Los Angeles, at the cost of $100,000. Mrs. McPherson claims "cures" in 80 per cent of the cases she treats.

(To be continued)

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
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CHICAGO

(Continued from page 1440)

Preservation of Aqueous Solutions.—While watery solutions of inorganic substances, or of organic substances with antiseptic properties, are not subject to change on keeping, there is quite a list of organic substances that are prone to fermentative or putrefactive decomposition when kept in aqueous solution without due precautions. Concentrated solutions of many of these substances are less prone to decomposition than are dilute solutions. Concentrated sugar solutions keep well, while dilute sugar solutions spoil readily. Weak solutions of many alkaloidal salts permit germ growth, while concentrated solutions may be easily kept germ free. This is one of the advantages of prescribing rather concentrated solutions to be diluted just before taking. Glucosidal principles in aqueous solution are very prone to decomposition.

Preservatives should be added only when they are unobjectionable from every standpoint. Among preserving agents, formaldehyde 0.05 per cent, has been found by Gabel[51] the most efficient, acting as it does in acid, alkaline and neutral solution. Benzoic acid, acting in 0.1 per cent solution, is superior to salicylic acid, of which 0.2 per cent is required; but either of them is efficient only in acid, and useless in alkaline medium. Alcohol preserves an acid drug preparation when present to the extent of 15 per cent; for alkaline and neutral liquid, 17.5 per cent alcohol is needed for preservation. Boric acid, chloroform and cinnamic acid have not been found efficient preservatives under the rather exacting conditions of Gabel's experiments. Glycerin, unless quite concentrated, is worthless as a preservative, 45 per cent being required in an alkaline medium; but even this much is insufficient in an acid or neutral medium.

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* This is the twentieth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

Sterilizing the solution and preserving it in sterile containers, such as ampules, is the most desirable method of preservation of solutions prone to bacterial decomposition, especially those that are to be used for *administration by injection.*

Vehicles.—In the art of prescribing, a good knowledge of vehicles is of the same importance as a liberal variety of spices and condiments in the art of cooking. Just as "we can live without art, but not so well," so we can get along without artistic perfection of our medicaments, but by no means so well. Our formularies offer us a choice among aromatic waters, spirits and tinctures, as well as among sweet preparations, such as syrups and elixirs.

As the choice of the proper vehicle is determined in the first place by the solubility of the active ingredients, it will be most helpful to arrange the vehicles, in accordance with their solvent action, into (1) aqueous and (2) alcoholic vehicles.

Aqueous Vehicles: The official waters are aqueous solutions of volatile substances.[52] Two very dissimilar classes of preparations come under this heading: the aromatic waters and the chemical waters, such as ammonia water.

Only the aromatic waters concern us here. They are saturated solutions of volatile oils and analogous substances. As volatile oils are only slightly soluble in water, the aromatic waters are weak preparations. The quantity that dissolves is just large enough to give these waters a pleasant flavor without imparting to them noticeable therapeutic properties. Hence their dose is large, ranging from 4 to 16 cc. One may use, as pleasant vehicles, anise water, fennel water, orange flower water, cinnamon water, peppermint water and rose water. The last named seems to be more suitable for external rather than for internal use. Chloroform water is really quite pleasantly flavored, of slightly sweetish taste, and has preservative powers which make it desirable for solutions that do not keep well.

Among the sweet aqueous vehicles, most prominent are the syrups, which are nearly saturated solutions of sucrose in aqueous liquids. Their especial value lies in pleasant taste of sugar and its action as a preservative. While dilute solutions of sugar ferment quickly unless preserved by special means, a fully saturated solution is not only quite stable but even capable of preserving other substances from fermentation, probably because sugar by its great affinity for water renders unavailable the moisture necessary for the development of microorganisms. Sugar forms, furthermore, an excellent preservative for certain unstable chemicals, such as hydriodic acid, ferrous iodide and hypophosphites, inhibiting chemical change probably by reason of its own chemical sluggishness. While some of the official syrups, as the syrups of the chemicals mentioned above, have an intrinsic medicinal action (medicated syrups), the majority of them are mere flavoring vehicles. The flavoring syrups, generally administered in doses of a teaspoonful—though much more might be given—are too thick and too sweet to be given undiluted; but the dilution should be ordered just before taking rather than in the prescription itself, for diluted syrups spoil readily on keeping, unless antiseptic ingredients are present. Interfering with a child's appetite and digestion by frequent dosing with heavy syrup should, of course, be avoided, especially in the case of ill nourished and feeble children, whose recovery may depend more on improved nutrition than on any medicament.

The official syrups named below are used in pleasant medication, and it is well to be familiar with all of them; for, just as variety of flavoring is aimed at in cooking, so is it well to aim at such variety in medication. If most of a physician's medicines look and taste nearly alike, as they easily may when he uses the same flavoring vehicle, patients may come to suspect that he uses the same medicine for all kinds of ills. When several members of a household require different medicaments, it is well to make distinction easy between them by marked divergence in color, flavor and taste. The syrups referred to above are:

Syrup, sometimes, though unnecessarily, also called simple syrup.

Syrup of citric acid (lemon syrup), which has an acid reaction due to citric acid (1 per cent) and hence is incompatible with alkali carbonates.

Syrup of orange, which also contains citric acid (0.5 per cent).

Syrup of orange flowers.
Syrup of pine tar.
Syrup of wild cherry.
Compound syrup of sarsaparilla.
Syrup of tolu.
Syrup of ginger.

To this list the following contributions of the National Formulary might be advantageously added:

Compound syrup of asarum (wild ginger).
Syrup of cacao (chocolate syrup).
Syrup of cinnamon.
Syrup of glycyrrhiza.
Aromatic syrup of eriodictyon (yerba santa).
Syrup of raspberry.
Syrup of thyme.

Among these, the syrups of citric acid, of orange and of raspberry might be noted most especially as pleasant vehicles for salines, the syrup of wild cherry as a corrective for sour tastes, and the syrups of cacao and glycyrrhiza, and the compound syrup of eriodictyon as the most suitable of the syrup vehicles for bitter drugs. One must beware of straining excessively the disguising values of syrups, most especially for the last named purpose: for the bitter sweet taste is repulsive to most of us. Thus, while quinine (alkaloid) or quinine ethyl carbonate (euquinine) in children's dosage may well be given in any one of the last mentioned syrups, it would be folly to try to disguise the taste of strychnine by means of them. Unusual flavors, like those of the compound syrup of asarum or of the syrup of thyme, are sometimes relished when the old familiar flavor of licorice or tar might seem flat and stale.

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[51] Gabel, L. F.: Preservatives in Pharmaceutical Preparations, J. Am. Pharm. A. **10:** 767 (Oct.) 1921.

[52] In contradistinction to the official solutions, which are aqueous solutions of nonvolatile substances, excepting syrups, infusions and decoctions, which naturally form distinctive classes.

The syrups are freely mixable with water and aqueous liquids, but, if added in concentrated form to strong alcoholic liquids, the sugar is precipitated or gradually crystallizes out of solution, as it is much less soluble in alcohol than in water. Being concentrated solutions, syrups will dissolve only a small quantity of other substances. If it is necessary to dissolve a large quantity, a certain amount of water will have to be added.

For diabetic patients and others for whom the prescribing of sugar would be undesirable, or if its fermentation must be avoided, gluside (saccharin) or soluble gluside (soluble saccharin) might be employed in quantities not exceeding 1 part per 2,000; otherwise it becomes disagreeable. Popular opinion to the contrary notwithstanding, gluside is perfectly harmless in any quantity that might be employed for sweetening of food or medicine.

Alcoholic Vehicles: Aromatic spirits and tinctures are chiefly used for the flavoring of strongly alcoholic liquids. All of them are incompatible with water. Among them may be mentioned:

Spirit of anise.
Compound spirit of orange.
Spirit of cinnamon.
Spirit of peppermint.
Spirit of spearmint.
Tincture of lemon
Tincture of tolu
Tincture of ginger.

These are rather strong (average, 10 per cent) alcoic solutions, the average dose of which is given as nging between 1 and 2 cc. Even one tenth of this suffices for the flavoring of alcoholic medicaments. The spirit of lavender and the compound tincture of lavender are perhaps better suited for flavoring external applications than medicament for internal use, though the latter is the traditional flavoring and coloring ingredient of the solution of potassium arsenite (Fowler's solution).

The aromatic tinctures are of interest because they offer eligible vehicles for alcohol soluble medicaments, especially those of bitter taste, which are not improved by sweetening. The best one among those made with strong alcohol as a menstruum is the tincture of sweet orange peel. In connection with it and the aromatic spirits we must remember that, when used in any considerable proportion, they are incompatible with water and even with diluted alcohol.

Tincture of cardamom and compound tincture of cardamom are made with diluted alcohol (50 per cent) and may be remembered as useful diluent and flavoring vehicles for tinctures made with mixtures of nearly equal quantities of alcohol and water. The dose of these aromatic tinctures is a teaspoonful. These, as well as all other strongly alcoholic liquids, should be freely diluted just before taking.

Elixirs are aromatic sweetened alcoholic preparations in which medicament may be dissolved. The first object aimed at in the modern elixir is an agreeable flavor. By means of it, the taste of nauseous medicines may often be rendered less disagreeable. They are especially useful as vehicles for hydro-alcoholic preparations, such as tinctures and fluidextracts, if their alcohol content is properly adjusted. There are two elixirs official in the U. S. P., aromatic elixir and elixir of glycyrrhiza, the latter of which is merely 12.5 per cent of fluidextract of glycyrrhiza added to aromatic elixir. The red aromatic elixir of the N. F. is aromatic elixir colored a beautiful red by 2 : 1,000 of cudbear. It must be remembered that these elixirs containing from 20 to 25 per cent of alcohol are as strong in alcohol as the strongest sherry wine, that even teaspoonful doses may be intoxicating to infants, and that their long continued use in liberal quantities may lead to the alcohol habit. Hence, unless medicated, these are classed among the intoxicating beverages by the National Prohibition Act, and cannot be prescribed except by complying with all its provisions.

The National Formulary affords a number of elegant vehicles of much lower alcohol content than the U. S. P. elixirs. The following elixirs contain only from 5 to 10 per cent alcohol—merely enough for solution and preservation—and, properly diluted, are admirable vehicles even for administration to children:

Aqueous elixir of glycyrrhiza—this is a good vehicle especially for salines, such as bromide and iodide.
Compound elixir of almond, especially useful for sour medicines, with which it gives the "cherry phosphate" flavor.
Elixir of anise.
Compound elixir of cardamom.
Compound elixir of vanilla.

It must be admitted that the physician experiences considerable difficulty in adjusting the alcoholic strength of his vehicles to yield clear and permanent solutions with the various medicinal fluidextracts and tinctures, as it is difficult for him to bear always in his mind the exact alcoholic strength of the menstruums. This difficulty could be overcome by the use of "iso-alcoholic elixir," as suggested by Fantus and Snow,[53] an elixir automatically adjusted by the pharmacist so as to have an alcoholic strength just sufficient to dissolve the medicament for which the elixir is to serve as a vehicle. The aromatic elixir of the present U. S. Pharmacopeia contains approximately 25 per cent alcohol, which is sometimes too much and sometimes not enough. Thus, if this elixir is to serve as a vehicle for sodium bromide, potassium acetate or sodium salicylate, no such amount as 25 per cent alcohol is required or desirable; alcohol, be it remembered, actually increasing the taste impression produced by these substances. If, on the other hand, it is to be used as a diluent for fluidextract of cannabis or fluidextract of buchu, it is decidedly deficient in alcohol and, in both instances, turbid unsightly mixtures result. Indeed, whenever there is a marked discrepancy between the alcohol strength of elixir and medicating preparation, precipitates occur, which in some cases, as, with tinctures of digitalis, veratrum viride, aconite, nux vomica, colchicum and lobelia, are liable to be toxic and dangerous. To enable the pharmacist to dispense iso-alcoholic elixir, two basic aromatic elixirs are required: first, an aqueous elixir containing approximately 5 per cent alcohol;

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[53] Fantus, Bernard; and Snow, C. M.: J. Am. Pharm. A. **10**: 277 (April) 1920.

and, secondly, an alcoholic elixir containing 95 per cent alcohol. The following formulas are proposed for these:

Aqueous Elixir

Compound spirit of orange	10 cc.
Alcohol	50 cc.
Syrup	375 cc.
Glycerin	200 cc.
Distilled water	to make 1,000 cc.

Purified talc is used for clarification.

Alcoholic Elixir

Compound spirit of orange	5 cc
Gluside	3 Gm.
Glycerin	200 cc.
Alcohol	to make 1,000 cc.

These two are mixable with each other in all required proportions.

If the physician prescribes "iso-alcoholic elixir," the pharmacist who is familiar with these preparations would take care of the proper alcoholic strength of the vehicle by using the aqueous and the alcoholic elixirs in the proportion in which water and alcohol exist in the menstruum of the active preparation, or is required for the making of a solution. This he could easily do with the help of his reference books. Incidentally, it might be noted that the alcoholic elixir, as it contains gluside (saccharin) instead of sugar, might be used as a pleasant alcoholic vehicle for medicaments intended for the diabetic patient. The aqueous elixir, containing only about 5 per cent alcohol, might also be employed as an additional elegant vehicle for water-soluble medicaments for children.

The use, as vehicles, of the elixir of pepsin and of the compound elixir of pepsin and rennin, elixir of caroid, and the like, has no scientific foundation whatever, as the digestive ferments are practically never absent from the stomach in cases of dyspepsia. It is difficult to see how the presence of these ferments in a medicament could make it more acceptable to a stomach that has an abundance of ferments, as it is well known that a slight increase in the amount of ferment does not measurably increase digestive activity. The practice is, no doubt, a survival of the day—not so long past—when the digestive ferments were hailed, even in scientific circles, as a panacea for digestive disorders. Commercial interests have been and are still at work to keep the fallacy alive. *It is not to be denied that* these elixirs are pleasant vehicles but they would be just as pleasant, just as efficient, and less expensive without the digestive ferments.

(To be continued)

Activities in the Athenian Program of Physical Education.—Games and gymnastics in Athens seem to have included most of the forms practiced in later life—running, the broad jump with and without weights in the hands, throwing the javelin and the discus for distance, and, above all, wrestling, besides the rudiments of boxing, and a form of the pancratium, a struggle which combined certain features of both boxing and wrestling with others of its own. Mention is also made of simple exercises to develop correct carriage and a graceful step in walking, and it is said that the art of swimming was early acquired, and that games, especially those in which the ball was used, were by no means forgotten. Dancing, at least in its more advanced forms, was not a regular subject of instruction at Athens, but was left to choral bands which received special training for their appearance before the public on festal occasions.—Leonard: History of Physical Education, p. 222.

ACTIVE "CORRESPONDENCE" DIPLOMA MILLS

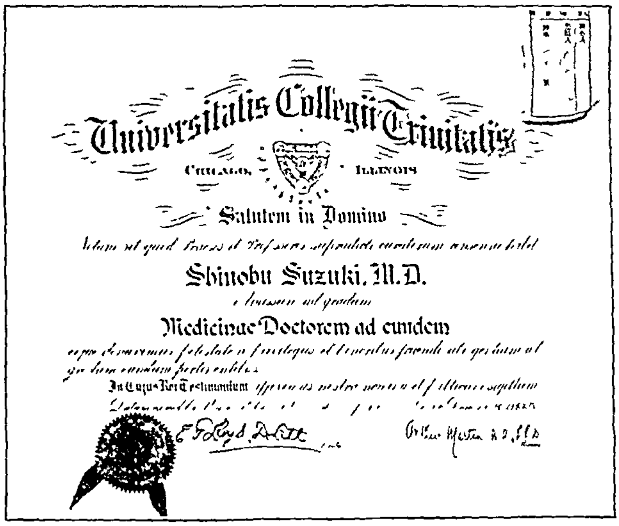
REPORT OF THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

From time to time diploma mill scandals have aroused the public and physicians to the dangers of the lack of suitable control of educational institutions. The laxness of laws permits the easy establishment of schools and colleges of all kinds in many states, and the difficulty of verifying graduation and diplomas permits unqualified men to secure credentials to which they are in no manner entitled.

The report that follows indicates the difficult procedure sometimes necessary to prevent unwarranted use of such diplomas, and exposes the nature of several closely related diploma mills.

The University of Trinity College

Hardly a month passes but some new "university" with a high sounding title is found to be filling the mails with follow-up letters or issuing diplomas after the flimsiest pretenses of their having been earned. The latest instance, evidently, is the "University of Trinity College" or, latinized, the "Universitatis Collegii Trinitatis." Nothing was known regarding this institution until photostat copies of diplomas issued to two students in Japan were received from the editor of the *Japan Medical World*. These diplomas, indeed, looked genuine, literally bedecked as they were with official signatures and seals of an imposing nature. The signature of the president of the "university" had been certified to by a notary public of Chicago; the notary's signature by a county clerk in Illinois, and each subsequent signature in turn certified to, evidently, by higher American and Japanese officials. Both of these diplomas were "ad eundem" degrees issued, respectively, to Shinobu Suzuki and Hanhito Otake by the University of Trinity College. A third diploma accompanying those of the University of Trinity College was a degree in medicine also "ad eundem" issued by Lincoln-Jefferson University to one Ribeji Hagibani. The three diplomas are



Universitatis Collegii Trinitatis
Chicago, Illinois
Salutem in Domino
Shinobu Suzuki, M.D.
Medicinae Doctorem ad eundem
In Cujus Rei Testimonium

Fig. 1.—Although this diploma is signed by two persons unidentified in other literature of the university, it was accompanied by an affidavit issued in the name and under the seal of the "University of Trinity College," signed by "A. W. Slade, D.D., LL.D.," as "President of the University and Board of Trustees." (See upper portion of figure 4.) In this affidavit the name of Shinobu Suzuki was not followed by the "M.D."

reproduced herewith. Meanwhile, we are informed that the three Japanese who obtained these irregular medical diplomas have been discredited in Japan.

A MEMBER OF THE LINCOLN-JEFFERSON BROOD

An investigation was instituted immediately to ascertain the origin of the so-called University of Trinity College. Strangely, this great institution appears to have been overlooked by all the recognized standardizing agencies which prepare lists of approved colleges and universities. A careful search of the Chicago telephone directories for the last five years also revealed no institution by that name. It soon became evident, however, that it was another member of the Lincoln-Jefferson family.

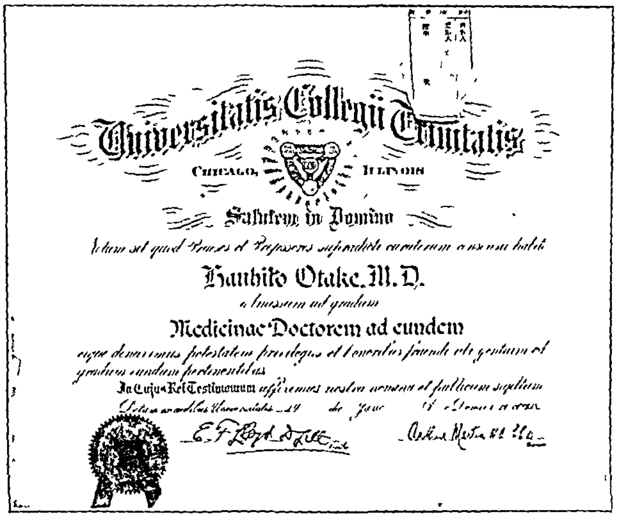

Universitatis Collegii Trinitatis
Chicago, Illinois
Salutem in Domino
Hanbito Otake. M.D.
Medicinae Doctorem ad eundem
In Cujus Rei Testimonium

Fig. 2.—Although this diploma is signed by two persons unidentified in other literature of the university, it was accompanied by an affidavit issued in the name and under the seal of the "University of Trinity College," signed by "A. W. Slade, D.D., LL.D.," as "President of the University and Board of Trustees." (See upper portion of figure 4.)

Photostat copies of the certification of the three diplomas referred to solved the problem. The diploma issued by Lincoln-Jefferson was certified to by "A. W. Slade, D.D., LL.D., as president of the University and of the Board of Trustees," and the certificate was stamped with the seal of Lincoln-Jefferson University.

The diplomas of the University of Trinity College were also certified to by "A. W. Slade, D.D., LL.D., President of the University and of the Board of Trustees." The latter, however, as shown in figure 4, were stamped with the seal of the "Universitatis Collegii Trinitatis." These disclosures show that the University of Trinity College is conducted by the same individuals who are responsible for the Lincoln-Jefferson University, even though the diplomas of the two institutions bear different signatures.

A letter from the secretary of state of Illinois shows the University of Trinity College was legally chartered, having been incorporated in Illinois in 1921 under the "not for profit" act. The address given was room 718, 155 North Clark Street, Chicago—a different address from that of Lincoln-Jefferson University, but its board of directors and incorporators were F. J. B. Walker, 1006 Michigan Avenue, LaPorte, Ind., A. L. Walker, 1006 Michigan Avenue, Laporte, Ind., and E. C. Ravenscroft, 127 North Dearborn Street, Chicago—persons closely identified with the latter institution.

According to circulars of the Lincoln-Jefferson University in the files of the American Medical Association, "Rev. John F. B. Walker, Ph.D., D.D., LL.D., F.R.G.S.," is given as "a perpetual member of the Board of Trustees" and for six years president of the Lincoln-Jefferson University. "E. C. Ravenscroft, Ph.D., J.D., D.C.L.," was its former secretary and is now a member of the board of trustees. As president of Lincoln-Jefferson, "Rev." Walker signs himself as "John F. B. Walker, Ph.D., D.Sc." At LaPorte, Ind., he is known as Rev. Dr. F. J. Barwell-Walker and, we are informed, is the rector of the Episcopal church at that place. This church is located at 1002 Michigan Avenue, and the rectory is at 1006 Michigan Avenue, LaPorte, Ind.—the same address that appears in the articles of incorporation of the University of Trinity College, although on the latter the initials are reversed, reading, "F. J. B. Walker." There may be definite reasons why in the signatures the initials are occasionally twisted around. The "Rev." A. W. Slade, D.D., LL.D., is reported also to be the rector of the local Episcopal church at Valparaiso, Ind. One wonders whether the degrees paraded by these two "reverends" are the products of their own mills; also whether these are not two more cases of "Dr. Jekyll and Mr. Hyde."

HEADQUARTERS OF THE LINCOLN-JEFFERSON UNIVERSITY

Interest in the offspring of the Lincoln-Jefferson University led to an investigation of the addresses given for it and for the University of Trinity College. Room 718, 155 North Clark Street, Chicago, the address of the latter, proved to be occupied by a group of architects who knew nothing of such an institution. The entire university had vanished or moved to parts unknown to them. Evidence revealed a connection between University of Trinity College and Lincoln-Jefferson, so that a visit was made to the latter's address given in the telephone directory. The Lincoln-Jefferson University occupies what it is pleased to call its "main headquarters"—a room on the eleventh floor of an office building in Chicago's business district. The investigator found that the entire university, including all it had in the way of laboratories, botanical gardens, libraries, lecture rooms and other equipment—such as are usually required to make up a reputable university—occupied a space not more than fourteen square feet, and space was still left for the University of Trinity College. These fourteen square feet were honored as the site, therefore, of two great universities. Possibly this is why the space had been divided into two rooms.

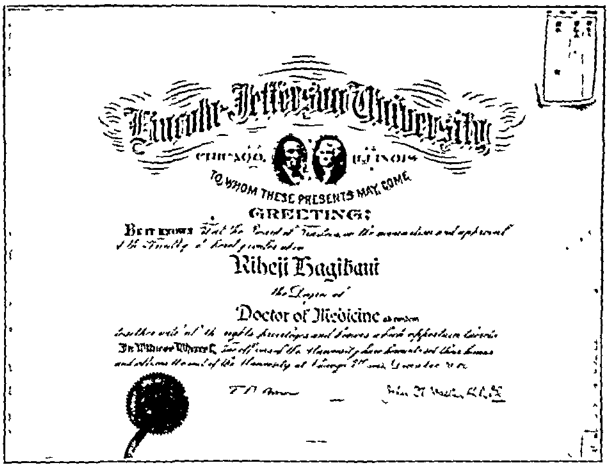
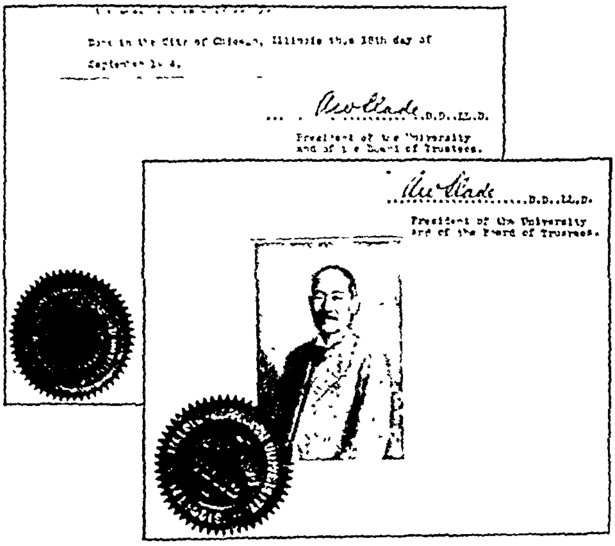

Lincoln-Jefferson University
Chicago, Illinois
To Whom These Presents May Come
GREETING:
Be it known
Riheji Hagibani
Doctor of Medicine
In Witness Whereof

Fig. 3.—Note that this diploma is signed by "John F. B. Walker, Ph.D., D.Sc., President," whose name stands first among the officers and faculty of the Lincoln-Jefferson University. It was accompanied also by an affidavit bearing the seal of the Lincoln-Jefferson University and signed by "A. W. Slade, D.D., LL.D., President of the University and Board of Trustees." See lower portion of figure 4.

The smaller room, apparently the holy of holies, bore a sign "Private." The college furniture and equipment in the larger room consisted of (*a*) one desk of very ordinary appearance; (*b*) one bench, which would seat two or possibly three "students," and (*c*) two or three ordinary chairs. The entire visible personnel was embodied in a woman of thirty-five or forty summers who informed our investigator that a "Dr." Slade in Valparaiso, Ind., would be glad to answer any questions submitted to him. The work, she said, was carried on by correspondence and all manuscripts were forwarded to Dr. Slade of Valparaiso and Dr. Walker of LaPorte, Ind., to whom she referred as "two English ministers" and also as "the head men on the faculty." When questioned as to whether or not medical courses were given by correspondence, she said rather hesitatingly that she thought "such work isn't given." Later she remembered that the faculty did give preliminary work in medicine.



Done in the City of Chicago, Illinois this 18th day of September 19 4.

A W Slade ..D.D., LL.D.
President of the University and of the Board of Trustees.

A W Slade ..D.D., LL.D.
President of the University and of the Board of Trustees.

Fig. 4.—These show the signatures and seals on the affidavits which accompanied the diplomas shown in figures 1 and 3. Note that both are signed alike by "A. W. Slade, D.D., LL.D., President of the University and the Board of Trustees," although one bears the seal of the University of Trinity College, the other the seal of the Lincoln-Jefferson University (names on seals Latinized).

STATEMENTS IN CATALOGUE

In a catalogue obtained on this visit it is stated that the Lincoln-Jefferson University and the University of Trinity College are "affiliated" and that the charter of the latter came "under the control of the Lincoln-Jefferson University in 1923." A report from the secretary of state of Illinois regarding the University of Trinity College, however, shows that it was chartered in 1921 by practically the same group that was then in control of the Lincoln-Jefferson University.

Another statement in the catalogue is that courses "are offered in the University of Trinity College under rather less strict (?) regulations than are in force with the Lincoln-Jefferson University," and that any one "holding Lincoln-Jefferson University degrees may duplicate those degrees from Trinity College by payment of the regular ad eundem degree fees."

In view of the three diplomas reproduced in this article, the statement published in the catalogue "that M.D. . . . degrees are not offered *by any reputable* school of correspondence work" (italics ours) and "we are not prepared to offer courses leading to these degrees," is sadly amusing. In a letter to the California board, John F. B. Walker states: "No medical degree has ever been conferred during my time with the Lincoln-Jefferson University for nonresident work." Nevertheless, note the degree from Lincoln-Jefferson University reproduced in this article, which was evidently signed by John F B Walker himself! Probably the fact that the American Medical Association has this part of the diploma mill field pretty well safeguarded so far as North America is concerned explains the sentence.

The willingness of this school to deceive the public is indicated by the statement in its catalogue that "all diplomas are issued without mention that any part of the work was taken by correspondence." In other words, let the public look on them as evidences of honest-to-goodness study, if they are foolish enough to do so!

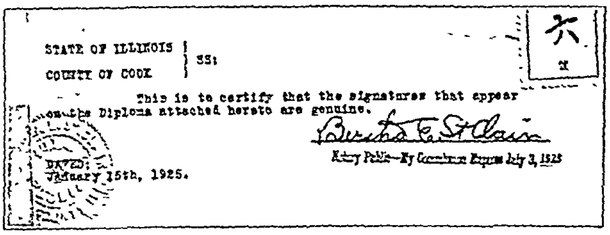
ARE THESE DIPLOMAS RECOGNIZED?

It is amusing to note at the back of the bulletin of the Lincoln-Jefferson University that one of "A Few 'Dont's' to Remember" reads "Don't be disappointed if some resident school does not give you reasonable credit for your work with us. It is not our fault. You will be suffering for the faults of correspondence schools in the past unless it happens to be simply stubbornness or 'swelled head.'" As a matter of fact, students of this university are "disappointed," no doubt, if they attempt to transfer their credits to any recognized institution

The diplomas issued by these institutions are of so suspicious a character as to make them unworthy of recognition by reputable educational agencies or institutions. The officers of these mills, meanwhile, are carrying on their traffic in spurious degrees at the same time that they are hiding under their ministerial garbs as purveyors of truth and sanctity! According to the strings of degrees following their names, the "Rev. A. W. Slade, M.A., D.D., LL.D.," and the "Rev. John F. B. Walker, Ph.D., D.D., LL.D., F.R.G.S.," might be viewed as paragons of erudition, were it not for the suspicion that all these degrees were obtained, probably without the expenditure of either time or money, from the same mills which are furnishing degrees so liberally to others at so much per.

The American University—Another Member of the Brood

The Lincoln-Jefferson University is shown to be closely related with a third institution, a so-called "American University" of Highland Park, Los Angeles, the incorporators of which, again, are Francis J. B. Walker, LaPorte, Ind., and E. C. Ravenscroft, Chicago. In a communication to the California State Board of Medical Examiners, Walker admitted that he "had agreed to hold the honorary position of chancellor of the American University and to act as dean of its theological department . . . until Ravenscroft could get things organized." The files of the California board show that the American University was incorporated in that state, April 11, 1921, but the first affidavit of the corporation papers were executed in Cook County, Ill., March 21, 1921. There is an "American University" incorporated in Illinois, but evidently by an entirely different group of individuals. Possibly it is in affiliation. The latter is a mail-order, correspondence affair of the most flagrant type and is conducting a large



STATE OF ILLINOIS }
COUNTY OF COOK } SS:

This is to certify that the signatures that appear on the Diploma attached hereto are genuine.

Bertha E. St Clair
Notary Public—My Commission Expires July 3, 1925

DATED:
January 15th, 1925.

Fig. 5.—This shows the signature and seal of the notary public who certified to the signatures of "A. W. Slade, D.D., LL.D." on the affidavits which accompanied the diplomas shown in figures 1, 2 and 3. Rev. Dr. Slade's signatures are shown in figure 4.

business in the issuing of diplomas, the main requisite evidently being the collection of the fees! A glance at the incorporation papers of the California institution, reproduced below, reveals no lack of versatility on the part of the "university"—quite consistent with the character of the "American University" of Illinois. Besides the numerous "colleges" listed which confer degrees, note also that the university reserves the privilege to add "any other colleges, schools or seminaries or departments that circumstances may require" Indeed, degrees of any kind seem available for the asking (and, of course, the payment of the required fee!) from this group of institutions which, although dignified by the title "university," on investigation were found to lack the buildings, grounds, laboratories, libraries and other things deemed essential by all bona fide and reputable universities!

American University

Incorporation No 94945, Filed April 11, 1921

The purposes —To provide, either in residence or by correspondence courses of instruction leading to all degrees usually granted by universities and colleges in the College of Liberal Arts, the College of Science, the College of Law, the College of Pharmacy, the College of Political and Social Sciences and Commerce, the College of Education and Normal Development, the College of Applied Science, the College of Divinity of Theological School or Seminary, the College of Fine Arts, the College of Agriculture, the College of Music, the College of Engineering, the Graduate College, the Grammer School, the High School or Academy and any other colleges, schools or seminaries or Departments that circumstances may require On the completion of such courses to issue appropriate diplomas To confer ad eundum and honorary degrees in all departments as may be deemed desirable This corporation reserves the right to establish branches of this University in any State of the Union and in all parts of the world.

The place of business is given as Los Angeles, and the "Directors and Trustees" are named as follows:

Francis J B Walker, La Porte, Ind
E C Ravenscroft, Chicago, Ill (Temporarily)
S C Ravenscroft, 454 West End Ave 56, Los Angeles
A M Ravenscroft, 454 West End Ave 56, Los Angeles
L M Ravenscroft, 454 West End Ave. 56, Los Angeles

THE "AMERICAN UNIVERSITY'S" HEADQUARTERS

A visit to the main office and headquarters of the American University revealed a small upstairs room at 5636 Pasadena Avenue, Highland Park, Los Angeles, which was not only the "office," but also the living and sleeping quarters of "Dean" Ravenscroft The complete furnishings of the "university" were enumerated as a dilapidated bed, an aged desk and a couple of chairs. From subsequent inquiry and an abundance of information on file, this equipment appears to harmonize perfectly with the character of this university.

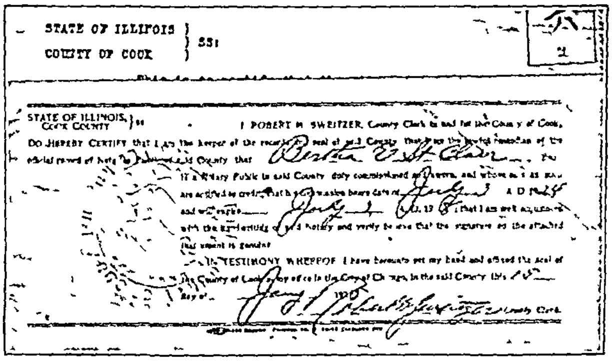
During the interview, the "dean" used the pronoun "we" in discussing the affairs of the university. When asked who the "we" included, he admitted it was just himself, because the word "we" sounded better. A bulletin of the American University showed that Rev George M. Kelly was president; that Samson C. Ravenscroft was secretary, and that George T Mills was treasurer. The "dean" stated that President Kelly was his cousin and that he was a preacher living in West Virginia, but refused to reveal his mail address, saying, "You know how relatives are, they go back on you when you get in trouble" "Samson C Ravenscroft is my brother," said the dean. "He tried the real estate business for awhile, but of late has been working as a house painter." He said that George T. Mills, the treasurer, was his cousin and that he lived in Santa Monica, Calif. Dean Ravenscroft stated that Irving I Jacobs, the "Dean of Pharmacy," resided in New Haven, Conn.; the "Dean of the Business College" at Miles City, Mont.; the "Dean of the Teachers' College" at Washington, D C ; while the "Dean of the College of Liberal Arts" held forth at Peru, Ind, and two other members of the faculty lived somewhere in England, their exact address being unknown.

The "dean" admitted that he was connected formerly with a correspondence school in Chicago, and that some one in that city occasionally sent him a list of names of prospective students to whom he would send the university's letters and literature. This alleged correspondence school offers to confer doctor degrees as well as the title of professor and to issue diplomas to accountants.

Reports show that agents of the American University have openly advertised its degrees in England, Venice, India and Japan A communication from Japan alleges that the American University, as well as the University of Trinity College and the Lincoln-Jefferson University, are offering correspondence degrees and selling diplomas in liberal arts, law, medicine and pharmacy to Japanese, Indians and Chinese at a good price.

DEGREES OF ALL VARIETIES—OTHERS FOR THE ASKING

The announcement of the Lincoln-Jefferson University[1] states that in 1917 "things could hardly have been worse" inasmuch as "there were few students and no funds." Conditions certainly "have changed" in regard to students (or graduates) and regarding funds also, no doubt. In slightly more than two years after Sept. 16, 1920, 536 degrees are listed as having been issued; there were thirty-eight different varieties and in twenty different subjects, besides academic diplomas and certificates in shorthand and typewriting. Titles of "professor" of this, that or the other subject have also been issued. The statement, in capital letters, appears that *"If you do not find what you want . . . write to the president."* In the charter of the American University of Los Angeles, also, after naming eighteen different schools and colleges, it is provided that "any other colleges, schools or seminaries or departments that circumstances may require" may be opened by this university. Right is reserved also "to establish branches of this university in any state of the Union *and in all parts of the world*" [Italics ours.—Ed.]



STATE OF ILLINOIS }
} SS:
COUNTY OF COOK }

STATE OF ILLINOIS, COOK COUNTY } ss I ROBERT M. SWEITZER, County Clerk in and for the County of Cook,

DO HEREBY CERTIFY

IN TESTIMONY WHEREOF

Fig 6—This is a photograph of the certification by the county clerk of Cook County, Ill, to the signature of the notary public who, in turn, certified to the signature of the "President of the University and Board of Trustees," who certified to the three diplomas reproduced in figures 1, 2 and 3—sort of a "House-that Jack Built" affair! The county clerk's signature was also supposed to be certified to by the signature and seal of the Japanese consul, and the latter's signature was certified to by the signature and seal of the Japanese ambassador—or some other higher Japanese official Thus the three diplomas, which were of little if any value educationally, reached Japan literally bedecked with official signatures and seals—if not also with ribbons!

ADVERTISING DIPLOMAS ABROAD

The good name of American education in foreign countries has suffered greatly from the activities of the agents of such "legally chartered" correspondence mills, which are really without equipment and standards but are always ready with degree conferring diplomas—elaborately signed and sealed but which educationally are of doubtful value—for which they are always ready to receive money. Most American educators have little knowledge of these invisible, underworld, mail-order affairs, just as respectable citizens know only through the newspapers of the activities of criminals and the passing of counterfeit money. Very few Chicago people, indeed, have any idea that such great (?) institutions as the "Lincoln-Jefferson University" or the "University of Trinity College" are located in the very heart of the city. These organizations, in fact, seldom advertise their wares in American newspapers, but prefer to work through the mails and through agents. They are inclined, evidently, to favor advertisement in countries far distant from American university centers; such as in India, Italy, South America and Cuba, and especially among the minor clergy whose vanity tempts them to secure some degree in theology or divinity—of which this university is ready to furnish some six or seven varieties.

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[1] Vol V, New Series, no 1

ACTIVITIES IN ITALY

In 1924, in Venice, one Prof. Dr. Serge Boris Dietrich, associated with two such institutions in selling "American degrees" in Italy, was imprisoned for one year and three months. The American consul, in reporting to the Department of State the trial and conviction of the man, said:

> The press of Venice gave wide publicity to the trial, as the testimony regarding the sale of the diplomas, titles and degrees furnished material therefor. American universities in general, in fact, all American institutions, came in for their ridicule; so that the prestige of American education has suffered somewhat of a shock in Italy at present. The inability of foreigners to differentiate between real universities and such universities as the Oriental University of Washington, D. C., and the American University of Los Angeles, Calif. (which were frequently mentioned in the testimony, owing to Dietrich's having represented them), made it seem natural that the inferiority of American institutions of learning should appear generally manifest to all who heard the testimony or read the press notices. As previously pointed out by this consulate in several of its dispatches of last year, *present conditions, whereby diploma mills of this sort are permitted to exist for the foreign market in degrees of American origin, militate against the entire education system of the United States and its prestige abroad.*[2] [Italics ours.—Ed.]

ARE THESE "BIRDS OF THE SAME FEATHER"?

From the foregoing, as well as other evidence, it is apparent that Prof. Dr. Serge Dietrich—sometimes given as Sergei Boris Dietrich—was the acting agent for both the American University of Los Angeles, Calif., and the Oriental University of Washington, D. C. As noted elsewhere, the charter of the latter institution was revoked, and on Jan. 9, 1926, its president, "Bishop" Helmuth P. Holler, was convicted on a charge of conspiracy for the purpose of making fraudulent use of the mails.

EVASION OF IMMIGRATION LAW

There is a suspicion that this traffic in diplomas is also aiding foreigners to evade the American immigration laws which permit the entrance of professional men from foreign countries over and above that country's annual immigration quota. It is not improbable that possessors of diplomas issued by phantom universities such as the "American University," as their character might be unknown to the immigration officers, would be permitted to enter the United States.

Diploma Traffic in India

Those conducting the Lincoln-Jefferson University and the other members of its brood are evidently doing a land office business in diploma selling in British India. Here again, as in Italy, one of the native agents was a graduate and an agent of the now defunct[3] Oriental University. This agent, Dr. Heramba Nath Chatterjee, openly advertised in the newspapers to the effect that American degrees in almost every subject known to educational bodies could be "arranged" by the "authorized board."

Chatterjee was said to have been also the agent of "The International University of the U. S. A.," which, by "affiliation," is apparently another member of the Lincoln-Jefferson brood. He is said to have occupied a rented room in Calcutta, where he acted as dean and entire faculty of several irregular "temples" and "colleges," including a bogus "Washington Medical College" which he claimed was "affiliated" with an American university—evidently the Lincoln-Jefferson University, of which Chatterjee appears as agent.

ANOTHER AGENT AND FACULTY MEMBER

Dr. Satish Chandra Banerjee, another local representative of the Lincoln-Jefferson University in India, is named in the Lincoln-Jefferson announcements as having been granted an M.D. degree and also as a member of its "faculty and advisory board." According to a report,[4] this agent openly published items in lay newspapers declaring that the Lincoln-Jefferson University "was chartered in Illinois"; "was recognized by the United States government"; "had no correspondence courses in medicine"; "did not grant honorary degrees." and that "the work of the Lincoln-Jefferson University was satisfactory to the 'Indian State Board.'" An investigation, however, brought out the facts that (*a*) "legal charters" in the United States meant very little because any one could easily obtain them and that the lowest type of diploma mills, including those closed by the courts, always have been "legally chartered"; (*b*) not only is the Lincoln-Jefferson University not recognized by the government of the United States, but its name does not appear in the list of recognized universities published by the United States Bureau of Education; (*c*) although the Lincoln-Jefferson University claims to have no correspondence course in medicine, the report of the Secretary of State of the United States says that all the work of the Lincoln-Jefferson University [whatever it may or may not consist of] is "conducted by correspondence"; (*d*) the agent's statement that "it does not grant honorary degrees" is contradicted by the Lincoln-Jefferson University in a letter stating: "We are not giving any course in medicine at all, nor do we grant medical degrees *excepting ad eundem and honorary*" [italics ours; honorary and ad eundem degrees are just as pretentious as earned degrees and will as readily deceive a credulous public.—Ed.]; (*e*) the Indian government has no "state board" such as was declared to be "satisfied with the work of the Lincoln-Jefferson University."

NO BRITISH RECOGNITION

The opinion of the General Medical Council of England regarding the Lincoln-Jefferson University is that it is "of more than dubious nature." Furthermore, the Council considers association with this university as "unprofessional conduct" and has demanded an explanation from the British medical men who in any way have been connected with either the International Medical College or the Lincoln-Jefferson University.

Use of Lincoln-Jefferson Pharmacy Degrees Unlawful in New York

The barter in medical diplomas by American diploma mills has been fairly well safeguarded and made difficult because of the vigilance of the American Medical Association. This probably accounts for the fact that the Lincoln-Jefferson University selected pharmacy as a safer and more remunerative field in which to work. Indeed, of the 536 degrees (at least) issued by the Lincoln-Jefferson University during the two brief years between September, 1920, and 1922, inclusive, 234 were in pharmacy—a rich field![5] Divinity was the next best field, in which eighty-seven degrees were issued!

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[2] From a report in the Educational Record, January, 1926.

[3] The charter of the Oriental University was revoked, Dec. 25, 1923, and on Jan. 9, 1926, "Bishop Helmuth P. Holler, Ph.D., D.Ps.T., LL.D., h.c., its founder, president and corresponding secretary, was given the maximum sentence of two years in jail and a fine of $1,000 by Mr. Justice Stafford of the Supreme Court of the District of Columbia.

[4] *Indian Medical Gazette, Calcutta.*

Reports show that early in 1924 Dr. Augustus S. Downing, director of professional education in New York, in a letter to the Lincoln-Jefferson University, denied statements made by "Dr." Irving I. Jacobs, dean of this university's school of pharmacy, that its degrees were recognized by the New York Board of Regents. In this letter Dr. Downing states:

> "I am in receipt of a special announcement of the Lincoln-Jefferson University; founded 1897; Rev. Dr. John F. B. Walker, President; School of Pharmacy—Post Graduate Department, from which circular I quote:
>
>> We advise that our graduates add the initials "Ill." after our degrees when displaying them on show windows, labels, etc., to show that the degrees were obtained from a university incorporated and chartered in the state of Illinois. This is in accordance with an arrangement entered into between the Lincoln-Jefferson University and the New York Board of Regents represented by Dr. Downing.
>
> "This advertisement must stop at once since no such arrangement was made between the Lincoln-Jefferson University and myself as representing the Board of Regents. Furthermore, at the last session of the legislature a law was enacted which reads as follows:
>
>> "Correspondence Schools. No person, firm or corporation shall conduct in this state a correspondence school unless such person, firm or corporation shall first have secured the approval of the Board of Regents. Such approval shall be secured and granted in accordance with rules and regulations adopted by such board. Violation of this section shall constitute a misdemeanor.
>
> "I am therefore advising all of those who are listed as having received the degree from your institution that such degree cannot be used in this state."

HISTORY OF "DR." JACOBS, DEAN OF PHARMACY

Reports of the activities of "Dr." Irving I. Jacobs[6] are particularly interesting. Besides being one of the deans of the Lincoln-Jefferson University, he also conducted the "Connecticut School of Pharmacy,". New Haven, which "obtained degrees for its part-time students from the Chicago diploma mill." Jacobs is said to have graduated about 1914 from the New Jersey College of Pharmacy, and afterward opened the "Hudson Institute of Pharmacy" in a hall room in Jersey City, N. J. He was also listed as an instructor at the "Columbia College of Jersey City," which had catalogues printed, but never functioned, its charter having been revoked by the New Jersey State Board of Education. It is said that Jacobs then started a school of pharmacy of his own in Brooklyn. For a time he is said to have conducted a class in Boston and another in New York, devoting one afternoon a week to each. He is said to look after all mail addressed to the department of pharmacy of the Lincoln-Jefferson University, which is forwarded to him at New Haven.

Summary

The information outlined in the foregoing pages contains facts that can be stated positively, as follows:

1. Three medical diplomas, one from Lincoln-Jefferson University and two from the University of Trinity College, were issued to persons in Japan.
2. Lincoln-Jefferson University, the University of Trinity College and the American University (Los Angeles) have no buildings, no laboratories, no grounds, no libraries or other equipment such as are considered as absolutely essential by bona fide reputable universities.
3. No one of these institutions is named in the list of colleges and universities approved by any standardizing agency deemed reliable by the Council on Medical Education and Hospitals.
4. The headquarters of the first two great (?) institutions consists of two small adjoining rooms in an office building in Chicago; the third is housed in one small upper room in Los Angeles, which served both as the "office" and as the living and sleeping quarters of the "dean." The furniture and total equipment of the first two "universities" consisted only of an ordinary desk and a few chairs, while the room of the Los Angeles institution boasted, in addition, a dilapidated bed.
5. Reliable reports show that Rev. John F. B. Walker, Ph.D., D.D., LL.D., F.R.G.S., and the Rev. A. W. Slade, A.K.C., M.A., D.D., LL.D., the two men at the head of this chain of invisible universities are rectors of Episcopal churches in their home cities—just as the head of the Oriental University reverently signed himself "Bishop."
6. The catalogue of Lincoln-Jefferson University contains the statement that M.D. degrees are "not offered by any reputable school of correspondence" and that "we are not prepared to offer courses leading to these degrees"; nevertheless, behold the "degrees in medicine" issued to three Japanese, reproduced in this article!
7. The institution is not loath to mislead the public, as shown by the following statement in its announcement: "All diplomas are issued without mention that any part of the work was taken by correspondence."
8. This "university" is considered as "of more than dubious nature" by the General Medical Council of England.
9. Agents of this group of institutions in Italy and India have openly advertised in the newspapers—not the educational advantages, but the degrees of these universities—just as they would advertise any other merchandise offered for sale.
10. The methods followed by the Lincoln-Jefferson University in the distribution and barter in diplomas are very similar to, if not identical with, those followed by the Oriental University which, Dec. 25, 1924, was closed by legal process and whose president, "Bishop" H. P. Holler, Jan. 9, 1926, was convicted and given the maximum penalty, two years in jail and a fine of $1,000.
11. The relationship of the Lincoln-Jefferson University and its affiliated institutions with the now defunct Oriental University is further suggested by the fact that agents or salesmen of the one have also represented the other and have used the same flagrant methods of advertising in connection with the two institutions.
12. Evidence shows that in the United States the Lincoln-Jefferson University's most prolific field of activity was in the barter of pharmacy degrees carried on in New York, until action by the Board of Regents and publicity by the *Pharmaceutical Era* put a stop to it.
13. Mention is made of numerous institutes, colleges, schools and universities in the literature of the Lincoln-Jefferson University relating to law, theology, medicine, pharmacy, etc., many of which, if existing at all, were created through the lack of adequate safeguards in this country over the chartering of educational institutions. Among the institutions named are several known to be of extremely low grade educationally, and for several others records show evidence of misleading or disreputable practices.
14. According to the Lincoln-Jefferson University's announcements, in slightly more than two years, degrees were issued to 536 different persons, these degrees being of at least thirty-eight varieties, others, evidently, to be had for the asking—and, of course, the fee. The title of "professor" was also granted in several instances. It is interesting to note that degrees were granted not only in "divinity," but also in "theology," in "sacred theology," altogether eighty-seven having been granted under these labels. Degrees also were granted in "law," "laws," "juris," "civil law" and "commercial law."
15. Needless to say, neither these "universities" nor their degrees are given recognition by any of the high grade, well known or established colleges or universities.

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[5] This "university's" activities in the barter of pharmacy degrees are further shown in the Pharmaceutical Era of Jan. 19, 1924.

[6] Pharmaceutical Era, Jan. 19, 1924.

STATE BOARD STATISTICS FOR 1925

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1534 to 1541 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1925. All state boards sent in reports, and the statistics are complete. The data in these tables are presented in the same manner as heretofore. The majority of graduates take the examination in the state in which the college is located, as shown by the dark diagonal zone of figures passing from the upper left to the lower right corner of each table. The marginal numbers enable one to follow readily the line for any college.

Graduates of All Years Examined in 1925

Table A shows the results for all candidates who took examinations in 1925, regardless of the years in which they graduated. This shows that altogether 5,956 candidates were examined last year, or 606 more than in 1924, and 1,258 more than in 1923. Since 1906 and until 1919, there was the expected decrease in the totals examined, owing chiefly to the general reorganization of medical education and, prior to 1919, in the decreasing numbers of students and graduates. Since 1918 there has been a constant increase, except in 1922, when the decrease was due to the small number, 2,529—the war class—that graduated in that year. Of the 5,404 examined in 1925, 9.3 per cent failed, as compared with 11.9 in 1924.

There were sixty-eight medical colleges in the United States granting degrees in 1925 which had graduates examined. This is eighty-five less than in 1905, when graduates from 153 medical colleges were examined. The statistics covering schools that have ceased to exist are included in the line for "miscellaneous colleges."

Table 1.—*Foreign Physicians Examined*

Year	Canada			Other Foreign Graduates			Totals		
	Examined	Failed	Per cent	Examined	Failed	Per cent	Examined	Failed	Per cent
1917	34	8	23.5	79	37	46.8	113	45	39.8
1918	29	10	31.5	45	17	37.8	74	27	36.5
1919	71	22	31.0	67	30	44.8	138	52	37.7
1920	85	21	24.7	86	33	38.4	171	54	31.6
1921	84	20	23.8	178	77	43.2	262	97	33.2
1922	73	9	12.3	186	76	40.9	259	85	32.4
1923	140	17	12.1	371	165	44.5	511	182	35.6
1924	212	14	6.6	591	231	39.1	803	245	30.5
1925	319	27	8.4	523	205	39.2	842	232	27.6
Totals	1,047	148	14.1	2,126	871	41.4	3,173	1,019	32.1

Applicants Examined from Canada and Abroad

Graduates of Canadian medical schools were examined last year in twenty-nine states. Last year 319 were examined, as compared with 212 in 1924, 140 in 1923, and eighty-two in 1922. The largest number, seventy, were examined in New York, the next largest number being forty-one examined in Michigan. The figures for each college are given so as to show the successes and failures of its graduates at the examinations. Of the 319 candidates examined, twenty-seven, or 8.4 per cent, failed.

The number of foreign physicians seeking licensure in the United States has been steadily increasing since the World War. There were 523 in 1925, exclusive of those from Canada, as compared with 591 in 1924, 371 in 1923 and 186 in 1922. Of the 523 examined in 1925, 205, or 39.2 per cent, failed. This year, foreign graduates were examined in thirty-one states, the largest number, 236, being examined in New York, of whom ninety-seven, or 69.8 per cent, failed. From all foreign countries, including Canada, 842 candidates were examined, of whom 610 passed and 232, or 27.6 per cent, failed. As shown in table 1, the number of applicants from foreign countries has rapidly increased since the conclusion of the World War.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, the reader must keep in mind (*a*) the number of graduates examined; (*b*) the number of states in which a school's graduates were examined, and (*c*) the character of the board making the examination and the methods employed. Some boards refuse to examine graduates of inferior medical colleges, while others admit not only graduates of low-grade medical colleges but also osteopaths to the physicians' and surgeons' examination. Some boards hold fairly severe examinations, which include practical laboratory and clinical tests, or they mark the papers strictly, while others are more lenient. It is particularly important, in forming conclusions based on these statistics, to note for each college the states ir which its graduates *are not admitted to examinations,* information set forth in table D. Very few state boards nov admit graduates of low-grade medical schools to thei examinations.

Undergraduates and Osteopaths Examined as Physicians During 1925

For the last five years, the few undergraduates examinec have been accidental or are exceptional instances. In 1925 seven undergraduates were examined. One undergraduat each was licensed by examination in Arizona,[1] Arkansas, Colorado[3] and Kentucky, while two failed in Colorado anc one in Illinois. In 1906, by contrast, there were 703 undergraduates examined, of whom 342 were licensed. The doo is now carefully guarded, therefore, against those whose medical training is known to be incomplete. Several boards however, continue to register as physicians and surgeons, b examination or by reciprocity, graduates of osteopathic colleges, which, if measured by the same standards as medica schools, could be graded only low in class C. Of the fifty-five osteopaths that were examined as physicians in fou states in 1925, twenty-three were licensed—thirteen in Massachusetts, five in Texas, three in Colorado, and two in Wisconsin. In two of these states—Colorado and Texas—th boards refuse to recognize graduates of class C medica schools (see table D); nevertheless, this year Colorado examined thirty-one graduates of class C medical schools, o whom seventeen were registered, while Colorado and Texa examined graduates of osteopathic colleges, which are nothing more than low type medical schools.

Recent Graduates Examined During 1925

Table B gives the results for graduates of 1921 to 1925, inclusive, who were examined during 1925. This table deal with recent graduates, and is the fairest basis for comparison between colleges. Of all candidates examined in 1925, 4,958

(CONTINUED ON PAGE 1541)

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[1] The applicant in Arizona held a diploma from the Pacific Medical College, which official reports designate as a diploma mill.

[2] The nongraduate licensed in Arkansas is reported as a graduate in 1899 of "Grant University," Chattanooga, Tenn. The medical department of this university was the Chattanooga Medical College, a regular and not an eclectic institution. The complete official alumni list of this college does not include the name of this applicant.

[3] In Colorado the board is required to admit to its examinations any applicant whether he is a graduate or not. It is very seldom that one passes the examination.

TABLE A—PHYSICIANS EXAMINI

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 Dist. Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		22 Minnesota	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	ARKANSAS																																												
1	University of Arkansas Medical Department	..	..	..	..	17	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..
	CALIFORNIA																																												
2	College of Medical Evangelists	..	..	1	0	..	..	59	2	..	..	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
3	Stanford University School of Medicine	..	..	..	..	..	..	26	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..
4	University of California Medical School	..	..	1	0	..	..	47	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	COLORADO																																												
5	University of Colorado School of Medicine	..	..	..	..	..	..	2	0	27	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..
	CONNECTICUT																																												
6	Yale University School of Medicine	..	..	..	..	..	..	..	..	..	..	9	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	2	0	..	..	..	..	..	..
	DISTRICT OF COLUMBIA																																												
7	Georgetown University School o																0	1	0	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	2	0
8	George Washington University																0	4	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..
9	Howard University School of M																0	..	..	..	..	..	..	1	1	1	0	..	..	2	0	..	..	..	..	..	..	2	1	..	..	2	0	..	..
	GEORGIA																																												
10	Emory University School of Medicine	8	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	61	3	56	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
11	University of Georgia Medical Department	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	29	7	25	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ILLINOIS																																												
12	Chicago Medical School																							[illegible]	7																				
13	Loyola Universit																																												
14	Northwestern Un																																												
15	Rush Medical College (University of Chicago)	..	..	..	..	..	..	[illegible]	1	..	..	..	..	..	..	2	0	13	1	..	..	..	..	[illegible]																					
16	University of Illinois College of Medicine	..	..	..	..	..	..	11	0	..	..	..	..	..	..	..	..	3	2	..	..	..	..	31	0	1	0	3	0	1	0	..	..	..	..	..	..	..	..	..	..	1	0	2	0
	INDIANA																																												
17	Indiana University School of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	9	0	..	..	..	..	1	0	77	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..
	IOWA																																												
18	State University of Iowa College of Medicine	..	..	..	..	..	..	3	0	..	..	..	..	..	..	..	..	1	0	..	..	2	0	2	0	..	..	71	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0
	KANSAS																																												
19	University of Kansas School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	31	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..
	KENTUCKY																																												
20	University of Louisville School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	3	..	..	..	..	2	0	4	0	..	..	..	..	49	0	..	..	..	..	..	..	1	0	..	..	1	0
	LOUISIANA																																												
21	Tulane University of Louisiana School of Medicine	9	0	..	..	1	0	3	0	..	..	..	..	..	..	..	..	20	3	1	0	..	..	1	0	..	..	..	..	1	0	..	..	60	0	..	..	1	0	..	..	..	..	..	..
	MARYLAND																																												
22	Johns Hopkins University Medical Department	..	..	..	..	..	..	2	0	..	..	1	0	..	..	6	0	7	0	..	..	..	..	1	0	1	0	1	0	..	..	..	..	..	..	..	..	30	0	1	1	..	..	1	0
23	Univ. of Md. School of Med. and Coll. of P. & S.	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	5	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	52	0	..	..	..	..	..	..
	MASSACHUSETTS																																												
24	Boston University School of Medicine	..	..	..	..	..	..	1	0	..	..	3	2	..	..	..	..	3	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	0	..	..	14	0	1	0	..	..
25	College of Physicians and Surgeons, Boston															1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..	..	..	..
6	Harvard University Medical School															1	0	6	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	0	..	..	22	0	4	0	1	0
7	Tufts College Medical School															3	0	8	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	7	0	..	..	53	0	3	0	..	..
8	Middlesex College of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	9	..	..	..	..
	MICHIGAN																																												
[illegible]	University of Michigan Medical School	..	..	..	..	..	..	6	2	..	..	..	..	..	..	1	0	4	1	..	..	..	..	3	0	1	0	..	..	..	..	..	..	..	..	..	..	1	0	1	0	145	0	..	..
[illegible]	Detroit College of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	0	..	..
	MINNESOTA																																												
[illegible]	University of Minnesota Medical School	..	..	..	..	..	..	3	0	..	..	..	..	..	..	..	..	3	0	..	..	..	..	2	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	103	0
	MISSOURI																																												
2	Kansas City College of Medicine and Surgery	..	..	..	..	19	0	..	..	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..
3	Kansas City University of Physicians and Surgeons	..	..	..	..	..	..	..	..	5	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
4	St. Louis College of Physicians and Surgeons	..	..	..	..	..	..	1	1	5	[illegible]													[illegible]	0	..	..	..	..	..	..	1	0	1	0	..	..	..	..	9	18	..	..	..	..
5	St. Louis University School of Medicine	..	..	..	..	..	..	2	0	1															0	1	0	..	..	2	0	..	..	..	..	..	..	..	..	..	..	2	0	4	0
6	Washington University School of Medicine	..	..	..	..	1	0	3	0	1															0	1	0	1	0	7	0	..	..	..	..	..	..	..	..	..	..	1	0	2	0
	NEBRASKA																																												
7	Creighton University College of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
8	University of Nebraska College of Medicine	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0
	NEW YORK																																												
9	Albany Medical College																	2	[illegible]																					[illegible]	[illegible]				
0	University of Buffal																	2																											
41	Columbia University																	3																											
42	Cornell University Medical College	..	..	..	..	..	..	..	..	..	..	[illegible]	[illegible]	..	..	..	..	3																											
43	Long Island College Hospital																	5																											
44	New York Homeo. Me																	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
45	University and Bellev																	2	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..
46	Syracuse University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	OHIO																																												
47	Eclectic Medical College					[illegible]	[illegible]	..	..	..	..	..	..	..	..	..	..	0	2	..	..	..	..	..	..	2	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..
48	University of Cinc							1	0	..	..	..	..	..	..	1	0	6	0	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
49	Western Reserve U							1	0	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
50	Ohio State Univer							1	0	..	..	..	..	..	..	..	..	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	OKLAHOMA																																												
51	University of Oklahoma School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	2	0	..	..	2	0	..	..	..	..	..	..	..	..	..	..
	OREGON																																												
52	University of Oregon Medical School	..	..	..	..	..	..	11	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	PENNSYLVANIA																																												
53	Hahnemann Medical College and Hosp. of Phila.	..	..	..	..	..	..	2	0	0	1	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..
54	Jefferson Medical College of Philadelphia	..	..	..	..	..	..	5	0	1	0	1	0	2	0	1	0	12	5	..	..	2	0	2	0	1	0	..	..	2	0	..	..	..	..	..	..	6	0	..	..	..	..	..	..
55	Temple University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..
56	University of Pennsylvania School of Medicine	1	0	..	..	..	..	11	0	..	..	..	..	..	..	..	..	15	2	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	1	0	1	0	1	0	2	0
57	Woman's Medical College of Pennsylvania	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..
58	University of Pittsburgh School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	SOUTH CAROLINA																																												
59	Medical College of the State of South Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..
	TENNESSEE																																												
60	University of Tennessee College of Medicine	2	0	..	..	3	0	1	0	..	..	..	..	..	..	1	0	4	[illegible]															3	0	..	..	..	..	..	..	..	..	..	..
61	Meharry Medical College	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1																3	1	..	..	1	0	0	1	..	..	..	..
62	Vanderbilt University School of Medicine	1	0	..	..	1	0	1	1	..	..	..	..	..	..	..	..	26																..	..	..	..	..	..	..	..	..	..	..	..
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

P = Passed; F = Failed.

23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		50 U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
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..	..	2	0	..	..	..	..	..	..	..	..	2	1	..	..	12	4	5	0	..	..	3	0	..	..	..	..	4	2	..	..	1	0	..	..	..	..	..	..	..	..	..	..	6	0	..	..	3	0	1	0	..	..	1	0	85	75	10	11.8	19	9
1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	136	133	3	2.2	7	10
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2	0	6	0	..	..	..	..	..	..	..	..	1	0	..	..	2	0																							..	..	..	..	..	..	3	0	..	..	6	0	1	0	1	0	112	107	5	4.5	23	14
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..	..	1	1	1	0	..	..	..	..	..	..	..	..	..	..	3	0	1	0	2	1	1	0	..	..	2	2	2	0	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	7	0	..	..	..	..	82	76	6	7.3	19	16
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	91	91	0	0.0	7	17
..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	87	85	2	2.3	10	18
..	..	4	0	2	0	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	39	1	2.5	6	19
..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	0	1	..	..	..	..	..	..	..	..	..	..	1	0	1	0	1	0	1	0	..	..	2	0	..	..	..	..	..	..	79	75	4	5.1	15	20
8	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	1	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	2	0	2	0	..	..	..	..	1	0	..	..	1	0	1	0	..	..	2	0	128	124	4	3.1	19	21
..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	6	0	1	0	..	..	3	0	..	..	..	..	2	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	68	67	1	1.5	17	22
..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	16	1	12	0	..	..	3	0	..	..	..	..	7	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	0	..	..	..	..	2	0	111	109	2	1.8	11	23
..	..	..	..	..	..	..	..	..	..	2	0	1	0	..	..	18	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	54	50	4	7.4	10	24
																		..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	8	5	3	37.5	3	25
																	0	..	..	..	..	5	0	..	..	1	0	1	0	4	0	1	0	..	..	..	..	2	0	1	0	2	0	..	..	..	..	1	0	2	0	..	..	2	0	80	80	0	0.0	22	26
																	1	..	..	..	..	1	0	..	..	..	..	2	0	5	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	129	125	4	3.1	15	27
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	5	9	64.3	1	28
..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	12	1	..	..	..	..	2	0	..	..	..	..	5	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	187	183	4	2.1	13	29
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	51	51	0	0.0	2	30
..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	3	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	2	0	..	..	3	0	..	..	..	..	126	126	0	0.0	14	31
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	22	3	12.0	3	32
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	5	1	16.7	1	33
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44	20	24	54.5	7	34
1	0	65	4	..	..	..	..	..	..	..	..	1	0	..	..	7	0																			..	..	..	..	..	..	..	..	..	..	..	..	1	0	2	0	1	0	2	0	130	126	4	3.1	19	35
..	..	52	3	1	0	..	..	..	..	..	..	..	..	..	..	..	..																			..	..	..	..	2	0	..	..	1	0	..	..	1	0	5	1	..	..	1	0	103	99	4	3.9	24	36
..	..	1	0	1	0	33	1	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	47	46	1	2.1	12	37
..	..	..	..	3	0	85	0	..	..	..	..	2	0	..	..	3	0	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	106	105	1	0.9	11	38
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	18	18	0	0.0	3	39
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	0	..	..	..	..	1	0	..	..	..	..	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	64	63	1	1.6	10	40
..	..	1	0	..	..	..	..	..	..	..	..	4	0	..	..	83	0	..	..	..	..	..	..	..	..	1	0	1	0	1	0	..	..	..	..	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	2	0	104	104	0	0.0	14	41
..	..	2	0	..	..	..	..	..	..	..	..	1	0	..	..	41	1	..	..	..	..	..	..	..	..	1	0	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	54	53	1	1.9	9	42
..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	93	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	105	103	2	1.9	5	43
..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	32	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	36	35	1	2.8	4	44
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	101	1	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	110	109	1	0.9	8	45
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	0	0.0	3	46
..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	14	3	..	..	..	..	21	1	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	41	7	14.6	8	47
..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	3	0	3	0	..	..	54	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	74	74	0	0.0	12	48
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	30	0	..	..	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	48	0	0.0	7	49
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	1	1	..	..	82	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	97	95	2	2.1	8	50
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	..	..	..	..	..	..	31	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	44	43	1	2.3	7	51
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	32	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	51	48	3	5.9	5	52
..	..	1	0	..	..	..	..	1	0	..	..	7	0	..	..	5	2	..	..	..	..	3	0	..	..	..	..	31	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	59	56	3	5.1	12	53
..	..	..	..	1	0	..	..	..	..	..	..	9	0	..	..	11	0	14	0	..	..	4	0	..	..	..	..	87	0	4	0	..	..	..	..	1	0	..	..	3	0	..	..	..	..	..	..	3	0	..	..	1	0	1	0	179	174	5	2.8	23	54
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	21	18	3	14.3	6	55
6	0	6	0	..	..	..	..	..	..	..	..	6	0	..	..	10	0	14	0	..	..	1	0	..	..	..	..	61	0	1	0	..	..	..	..	..	..	3	0	4	0	..	..	..	..	..	..	1	0	7	0	1	0	1	0	159	156	2	1.3	23	56
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	2	..	..	..	..	4	0	..	..	..	..	7	2	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24	18	6	25.0	7	57
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	..	..	8	0	..	..	..	..	30	1	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	46	45	1	2.2	8	58
..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	3	0	..	..	..	..	..	..	..	..	1	0	..	..	29	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	50	0	0.0	7	59
3	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2											1	1	..	..	1	0	..	..	51	0	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	..	..	78	74	4	5.1	13	60
1	0	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..											1	2	..	..	3	1	..	..	20	0	2	1	..	..	..	..	1	0	..	..	6	0	..	..	..	..	..	..	76	60	16	21.1	20	61
1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0											0	1	..	..	..	..	..	..	39	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	83	75	8	9.6	11	62
23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE A—PHYSICIANS EXAMINED

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 Dist. Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		22
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P
	TEXAS																																											
63	Baylor University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
64	University of Texas School of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
	VERMONT																																											
65	University of Vermont College of Medicine	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	...
	VIRGINIA																																											
66	Medical College of Virginia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	10	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
67	University of Virginia Department of Medicine	2	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	7	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	1
	WISCONSIN																																											
68	Marquette University School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
	PHILIPPINE ISLANDS																																											
69	University of the Philippines, Manila	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
70	University of St. Thomas, Manila	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
	CANADA																																											
71	Dalhousie University Faculty of																																									1	0	...
72	Queen's University Faculty of Me																																									2	0	...
73	*University of Toronto Faculty of*																																									24	0	1
74	University of Western Ontario Medical School	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	...
75	McGill University Faculty of Medicine	..	..	..	..	..	..	0	1	..	..	2	2	..	..	..	..	2	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	9	0	2	0	3	0	10	0	1
76	University of Montreal Medical Faculty	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	3	..	..	1	2	..	..	...
77	Laval University Faculty of Medicine	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	...
78	University of Manitoba Faculty of Medicine	..	..	..	..	..	..	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	2
79	Foreign Colleges	..	..	..	..	..	..	26	20	2	0	1	6	1	0	3	0	4	2	..	..	..	..	29	18	..	..	3	0	..	..	2	1	..	..	3	0	6	4	4	8	6	2	1
80	Miscellaneous Medical Colleges	0	1	2	0	3	0	4	2	2	1	2	1	..	..	2	0	35	50	..	..	1	0	21	4	..	..	2	1	3	0	1	1	0	1	..	..	1	0	3	2	3	0	...
81	Undergraduates and Osteopaths	..	..	1	0	1	0	..	..	4	7	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	1	0	..	..	..	..	..	..	13	22	..	..	...
82	Totals by States	27		5		48		331		69		63		5		107		537		86		9		335		96		90		65		60		74		43		121		214		270		1
83	Totals — Examined — Passed	26		5		48		293		52		49		4		105		437		86		9		296		96		89		65		58		72		40		115		146		268		1
84	Totals — Examined — Failed	1		0		0		38		17		14		1		2		100		0		0		39		0		1		0		2		2		3		6		68		2		
85	Percentage of Failures	3.7		0.0		0.0		11.5		24.6		22.2		20.0		1.9		1.9		0.0		0.0		11.6		0.0		1.1		0.0		3.3		2.7		7.0		5.0		31.8		0.7		
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		

P = Passed; F = Failed.

TABLE B—GRADUATES OF 1921 TO 1925, INCLUSI

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Arizona		3 Arkansas		4 California		5 Colorado		6 Connecticut		7 Delaware		8 Dist. Columbia		9 Florida		10 Georgia		11 Idaho		12 Illinois		13 Indiana		14 Iowa		15 Kansas		16 Kentucky		17 Louisiana		18 Maine		19 Maryland		20 Massachusetts		21 Michigan		Minnesota
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P
	ARKANSAS																																											
1	University of Arkansas Medical Department	..	..	..	..	16	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
	CALIFORNIA																																											
2	College of Medical								2	..	..	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
3	Stanford University								0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	...
4	University of Califo								0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
	COLORADO																																											
5	University of Colorado School of Medicine	..	..	..	..	..	..	1	0	27	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	...
	CONNECTICUT																																											
6	*Yale University School of Medicine*	..	..	..	..	..	..	..	..	..	..	9	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	2	0	..	..	..	..	...
	DISTRICT OF COLUMBIA																																											
7	Georgetown University School of Medicine	..	..	..	..	..	..	..	..	..	..	1	0	..	..	14	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	2
8	George Washington University Medical School	..	..	..	..	..	..	2	0	..	..	..	..	..	..	31	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	...
9	Howard University School of Medicine	1	0	..	..	..	..	1	1	..	..	..	..	..	..	25	0	..	..	..	..	..	..	1	0	1	0	..	..	2	0	..	..	..	..	..	..	2	1	..	..	2	0	...
	GEORGIA																																											
10	Emory University School of Medicine	8	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	1	56	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
11	University of Georgia Medical Department	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	16	0	25	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
	ILLINOIS																																											
12	Chicago Medical School	..	..	..	..	..	..																	16	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
13	Loyola University School of Medicine	..	..	..	..	..	..																		2	..	..	1	0	1	0	..	..	1	0	..	..	0	1	..	..	..	..	...
14	Northwestern University Medical School	..	..	..	..	..	..																		0	2	0	3	0	1	0	..	..	..	..	..	..	..	..	..	..	6	0	4
15	Rush Medical College (*University of Chicago*)	..	..	..	..	..	..	12	0	..	..	..	..	..	..	2	0	2	0	..	..	..	..	74	0	1	0	1	0	2	0	1	0	..	..	..	..	..	..	..	..	1	0	4
16	University of Illinois College of Medicine	..	..	..	..	..	..	9	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	31	0	1	0	3	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	2
	INDIANA																																											
17	Indiana University School of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	7	0	..	..	..	..	1	0	77	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
	IOWA																																											
18	State University of Iowa College of Medicine	..	..	..	..	..	..	3	0	..	..	..	..	..	..	..	..	1	0	..	..	2	0	2	0	..	..	71	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1
	KANSAS																																											
19	University of Kansas School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	0	..	..	..	..	..	..	1	0	..	..	..	..	...
	KENTUCKY																																											
20	University of Louisville School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	2	0	4	0	..	..	..	..	48	0	..	..	..	..	..	..	..	..	..	..	1
	LOUISIANA																																											
21	Tulane University of Louisiana School of Medicine	9	0	..	..	..	..	3	0	..	..	..	..	..	..	..	..	11	0	1	0	..	..	1	0	..	..	..	..	1	0	..	..	60	0	..	..	1	0	..	..	..	..	...
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22

P = Passed; F = Failed

TATE BOARDS DURING 1925—*Continued*

23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		50 U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. In	Marginal Number
P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
		1	0													2	0	1	0																			26	0																	31	31	0	0.0	5	63
						1	0									1	0											1	0									59	0																	64	64	0	0.0	6	64
		1	0													7	0													1	0											38	0													52	51	1	1.9	8	65
												1	0			5	0	11	0									3	0															36	0			15	0							84	84	0	0.0	9	66
3	0																	6	0													1	0											31	0			1	0							55	55	0	0.0	10	67
		1	0																																															49	1					52	51	1	1.9	3	68
																																																						19	0	19	19	0	0.0	1	69
																												1	0																									30	9	41	32	9	22.0	2	70
																2	0					1	0					1	0																											8	8	0	0.0	6	71
																15	2			1	0							1	0																	2	1	1	0	1	0					37	32	5	13.5	11	72
												1	0	1	0	24	2			1	0	13	0					17	0											1	0			1	0			0	1	2	0					118	111	7	5.9	22	73
				1	0											4	0					5	0			1	0																			1	0			1	0					21	20	1	4.8	10	74
		1	0									5	0			25	2					4	0			1	0	5	0													8	0			4	0	1	0	3	0			1	0	93	88	5	5.4	20	75
																																																								9	3	6	66.7	3	76
																				0	1																																			4	1	3	75.0	3	77
																				10	0			1	0	1	0																			6	0	2	0							29	29	0	0.0	9	78
						1	2	1	0			20	4			139	97			0	1	18	0	2	0	1	0	16	9	4	2			2	0			7	1			1	0			2	0	2	7	10	8			1	4	523	318	205	39.2	31	79
		3	2	1	1	0	1					2	1			5	5					1	0			0	1	4	3					1	0	1	0							1	0	1	1	0	1	1	2			3	2	243	159	84	34.7	32	80
2	0																																					5	3											2	0					62	29	33	53.2	9	81
28		176		14		129		2		3		80		1		1069		81		21		319		38		60		359		27		39		14		119		115		13		52		87		29		66		127		4		94		5956					82
28		165		13		124		2		3		74		1		933		80		18		306		38		51		335		25		38		14		119		110		13		52		87		27		57		115		4		78			5404				83
0		11		1		5		0		0		6		0		136		1		3		13		0		9		24		2		1		0		0		5		0		0		0		2		9		12		0		16				552			84
0.0		6.2		7.2		3.9		0.0		0.0		7.5		0.0		12.7		1.2		14.3		4.1		0.0		15.0		6.7		7.5		2.6		0.0		0.0		4.3		0.0		0.0		0.0		6.9		13.6		9.4		0.0		17.0					9.3		85
23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

XAMINED BY STATE BOARDS DURING 1925

Marginal Number	23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		50 U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. In	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1																	7	1																																							1	0	26	25	1	3.8	4	1
2																			1	0							1	0																													66	64	2	3.0	6	2
3																																																									27	27	0	0.0	2	3
4																	1	0									1	0																			1	0			1	0					51	51	0	0.0	6	4
5			1	0													1	0																																					1	0	32	32	0	0.0	6	5
6			1	0									1	0			7	0					2	0																																	24	24	0	0.0	8	6
7													5	0			15	0	1	0									2	0	1	0																									44	44	0	0.0	11	7
8																	9	0											1	0															3	0					1	0			1	0	51	51	0	0.0	9	8
9			2	0									2	1			11	3	5	0			3	0					4	2			1	0											6	0			3	0	1	0			1	0	82	74	8	9.8	19	9
10	1	0															5	0																															1	0							122	121	1	0.8	7	10
11																	2	0	1	0																																			1	0	45	45	0	0.0	5	11
12																																																									23	16	7	30.4	1	12
13					1	0							1	0			1	0					2	0			1	0							1	0																			1	0	37	34	3	8.1	14	13
14	2	0	5	0									1	0			2	0			2	0	4	0	1	0	1	1	3	0																	2	0			6	0			1	0	99	98	1	1.0	20	14
15			1	0													8	1			2	0	1	0			3	0	2	0					3	0											2	0			6	0			1	0	130	129	1	0.8	20	15
16			1	0													2	0	1	0	2	0	1	0			0	1	2	0					1	0											1	0			7	0					67	66	1	1.5	17	16
17																							1	0					1	0																											88	88	0	0.0	6	17
18			1	0													1	0									1	1																													85	84	1	1.2	10	18
19			3	0	2	0	0	1																																																	38	37	1	2.6	5	19
20			1	0													1	0							1	0	0	1											1	0	1	0			1	0			2	0							65	64	1	1.5	13	20
21	7	0															7	1	1	0									1	0							2	0	1	0					1	0			1	0	1	0			1	0	111	110	1	0.9	18	21
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE B—GRADUATES OF 1921 TO 1925, INCLUSIV

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	
		Alabama		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan		Minnesota	
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F
	MARYLAND																																												
22	Johns Hopkins University Medical Department							2	0			1	0			5	0	4	0					1	0	1	0											29	0	1	0			1	[illegible]
23	Univ. of Md. School of Med. and Coll. of P. & S.											3	0					1	0							1	0											52	0						
	MASSACHUSETTS																																												
24	Boston University School of Medicine							1	0			3	2					2	0																	6	0			14	0	1	0		
25	College of Physicians and Surgeons, Boston																																							3	2				
26	Harvard University Medical School							9	0			4	0					1	0																	3	0			22	0	4	0	1	0
27	Tufts College Medical School							1	0			9	2			3	0	3	0																	7	0			53	0	3	0		
28	Middlesex College of Medicine and Surgery																																							5	9				
	MICHIGAN																																												
29	University of Michigan Medical School							6	2							1	0	2	0					3	0	1	0											1	0			145	0		
30	Detroit College of Medicine and Surgery																																									49	0		
	MINNESOTA																																												
31	University of Minnesota Medical School							3	0									2	0					2	0			1	0															103	0
	MISSOURI																																												
32	Kansas City College of Medicine and Surgery					19	0			3	2																													0	1				
33	Kansas City University of Physicians and Surgeons									4	1																																		
34	St. Louis College of Physicians and Surgeons							1	1	5	[illegible]																					1	0							9	18				
35	St. Louis University School of Medicine							2	0	1																																2	0	4	0
36	Washington University School of Medicine							3	0	1																																1	0	2	0
	NEBRASKA																																												
37	Creighton University College of Medicine							1	0							1	0													2	0														
38	University of Nebraska College of Medicine							2	1									2	0											2	0													1	0
	NEW YORK																																												
39	Albany Medical College																																												
40	University of Buffalo Medical Department							1	0			1	0																									2	0					1	0
41	Columbia University College of Phys. and Surgs.							3	0			1	0							1	0																								
42	Cornell University Medical College											1	0					1	0											1	0									1	0				
43	Long Island College Hospital											3	0					3	0																										
44	New York Homeo. Med. Coll. and Flower Hosp.															1	0	1	0																										
45	University and Bellevue Hospital Medical College							1	0									1	0	1	0															1	0								
46	Syracuse University College of Medicine																	1	0					2	0																				
	OHIO																																												
47	Eclectic Medical College					1	0											0	1							2	0					1	0												
48	University of Cin [illegible]							1	0							1	0	4	0					1	0	1	0																		
49	Western Reserve [illegible]							1	0									1	0											1	0														
50	Ohio State University College of Medicine							1	0									2	0																										
	OKLAHOMA																																												
	University of Oklahoma School of Medicine																							1	0					2	0			2	0										
	OREGON																																												
	University of Oregon Medical School							11	1															2	0																				
	PENNSYLVANIA																																												
	Hahnemann Medical College and Hosp. of Phila.							2	0																											1	0								
54	Jefferson Medical College of [illegible]																							2	0	1	0											6	0						
55	Temple University School of [illegible]																																					1	0						
56	University of Pennsylvania [illegible]																							1	0											1	0	1	0			1	0	1	0
57	Woman's Medical College of Pennsylvania																																							1	0				
58	University of Pittsburgh School of Medicine																	1	0																										
	SOUTH CAROLINA																																												
59	Medical College of the State of South Carolina																	7	0													1	0			1	0								
	TENNESSEE																																												
60	University of Tennessee College of Medicine	2	0			3	0	1	0							1	0	2	0															3	0										
61	Meharry Medical College	1	0															0	2						2	1	[illegible]			2	0	1	0	3	0			1	0	0	1				
62	Vanderbilt University School of Medicine	1	0					0	1									12	0					1	0																				
	TEXAS																																												
63	Baylor University College of Medicine																							1	0																				
64	University of Texas School of Medicine							1	0																																				
	VERMONT																																												
65	University of Vermont College of Medicine											1	0																							1	0			1	0				
	VIRGINIA																																													
66	Medical College of Virginia															1	0	3	0	1	0																								
67	University of Virginia Department of Medicine	2	0													2	0	5	0																			1	0			1	0	1	0
	WISCONSIN																																												
68	Marquette University School of Medicine																							1	0																				
	PHILIPPINE ISLANDS																																												
69	University of the Philippines, Manila																																												
70	University of St. Thomas, Manila																																												
	CANADA																																												
71	Dalhousie University Faculty of Medicine																																			1	0			2	0	1	0		
72	Queen's University Faculty of [illegible]																																									1	0		
73	University of Toronto Faculty [illegible]																																									19	0	1	0
74	University of Western Ontario [illegible]																																									3	0		
75	McGill University Faculty of [illegible]																																									9	0	1	0
76	University of Montreal Medical Faculty											0	1																							2	3			1	2				
77	Laval University Faculty of Medicine																																							0	1				
78	University of Manitoba Faculty of Medicine							3	0															2	0													1	0					2	0
79	Foreign Colleges							8	8			1	4			3	0	1	0					14	9			1	0			1	1			2	0	4	3	1	3	3	0	1	0
80	Miscellaneous Medical Colleges									0	1	2	0					0	1			1	0	17	0																	1	0		
81	Undergraduates and Osteopaths																																												
82	Totals by States	2[illegible]		2		39		272		52		59		3		96		182		85		[illegible]		28[illegible]		96		83		59		55		69		39		115		159		254		134	
83	Totals — Examined — Passed	25		2		39		255		43		48		3		96		177		85		[illegible]		26[illegible]		9[illegible]		83		59		54		69		36		110		121		254		134	
84	Totals — Examined — Failed	0		0		0		17		9		11		0		0		5		0		0		2[illegible]		[illegible]		0		0		1		0		3		5		38		0		0	
85	Percentage of Failures	0.0		0.0		0.0		6.3		17.3		19.3		0.0		0.0		2.7		0.0		0.[illegible]		6.[illegible]		0.[illegible]		0.[illegible]		0.0		1.8		0.0		7.7		4.3		23.9		0.0		0.0	
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22	

P = Passed; F = Failed.

Marginal Number	23 Mississippi		24 Missouri		25 Montana		26 Nebraska		27 Nevada		28 New Hampshire		29 New Jersey		30 New Mexico		31 New York		32 North Carolina		33 North Dakota		34 Ohio		35 Oklahoma		36 Oregon		37 Pennsylvania		38 Rhode Island		39 South Carolina		40 South Dakota		41 Tennessee		42 Texas		43 Utah		44 Vermont		45 Virginia		46 Washington		47 West Virginia		48 Wisconsin		49 Wyoming		50 U. S. Territories and Possessions		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. In	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
22	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	3	0	1	0	..	..	3	0	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	55	55	0	0.0	14	22
23	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	14	0	12	0	..	..	3	0	..	..	..	..	6	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	0	..	..	..	..	2	0	103	102	1	1.0	11	23
24	..	..	..	..	..	..	..	..	..	..	2	0	1	0	..	..	18	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52	48	4	7.7	9	24
25	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	3	2	40.0	1	25
26	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	6	0	..	..	..	..	4	0	..	..	1	0	1	0	4	0	1	0	..	..	..	..	2	0	1	0	2	0	..	..	..	..	1	0	2	0	..	..	1	0	72	72	0	0.0	21	26
27	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	28	1	..	..	..	..	1	0	..	..	..	..	2	0	3	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	119	116	3	2.5	13	27
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	5	9	64.3	1	28
29	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	11	1	..	..	..	..	2	0	..	..	..	..	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	181	178	3	1.7	12	29
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	50	50	0	0.0	2	30
31	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	3	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	2	0	..	..	3	0	..	..	..	..	125	125	0	0.0	14	31
32	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	22	3	12.0	3	32
33	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	4	1	20.0	1	33
34	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42	18	24	57.1	5	34
35	1	0	65	4	..	..	..	..	..	..	..	..	1	0	..	..	5	0																									..	..	..	..	..	..	..	..	1	0	2	0	1	0	2	0	127	123	4	3.1	19	35
36	..	..	52	3	1	0	..	..	..	..	..	..	..	..	..	..	..	..																									2	0	..	..	1	0	..	..	1	0	5	1	..	..	1	0	99	95	4	4.0	20	36
37	..	..	1	0	1	0	33	1	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	45	44	1	2.2	10	37
38	..	..	..	..	3	0	85	0	..	..	..	..	2	0	..	..	3	0	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	106	105	1	0.9	11	38
39	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	14	0	0.0	1	39
40	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48	0	..	..	..	..	1	0	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	56	56	0	0.0	7	40
41	..	..	..	..	..	..	..	..	..	..	..	..	3	0	..	..	81	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	2	0	94	94	0	0.0	9	41
42	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	41	1	..	..	..	..	..	..	..	..	1	0	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	50	1	2.0	9	42
43	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	93	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	101	100	1	1.0	4	43
44	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	33	33	0	0.0	3	44
45	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	101	1	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	108	107	1	0.0	7	45
46	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	40	40	0	0.0	3	46
47	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	3	..	..	..	..	21	1	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	41	5	10.9	7	47
48	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	3	0	3	0	..	..	54	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	71	71	0	0.0	11	48
49	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	0	..	..	..	..	30	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	46	46	0	0.0	6	49
50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1	1	1	..	..	82	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	95	93	2	2.1	8	50
51	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	..	..	..	..	..	..	31	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	44	43	1	2.3	7	51
52	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	32	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	51	48	3	5.9	5	52
53	..	..	1	0	..	..	..	..	..	..	..	..	7	0	..	..	4	1	..	..	..	..	3	0	..	..	..	..	31	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	53	52	1	1.9	9	53
54	..	..	..	..	1	0	..	..	..	..	..	..	9	0	..	..	11	0	14	0	..	..	4	0	..	..	..	..	83	0	3	0	..	..	..	..	1	0	..	..	3	0	..	..	..	..	..	..	3	0	..	..	1	0	1	0	157	157	0	0.0	21	54
55	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	14	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	18	16	2	11.1	3	55
56	1	0	6	0	..	..	..	..	..	..	..	..	6	0	..	..	10	0	14	0	..	..	1	0	..	..	..	..	60	0	..	..	..	..	..	..	..	..	3	0	4	0	..	..	..	..	..	..	1	0	7	0	1	0	1	0	137	137	0	0.0	21	56
57	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	2	..	..	..	..	4	0	..	..	..	..	7	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	17	4	19.0	4	57
58	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	8	0	..	..	..	..	30	1	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	43	42	1	2.3	6	58
59	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	3	0	..	..	..	..	..	..	..	..	..	..	..	..	29	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42	42	0	0.0	6	59
60	3	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1											1	0			1	0			[illegible]	0	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	..	..	73	72	1	1.4	12	60
61	1	0	4	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..																					0	2	1	..	..	..	..	1	0	..	..	6	0	..	..	..	..	..	..	64	54	10	15.6	18	61
62	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0																					0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	60	58	2	3.3	10	62
63	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	2	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31	31	0	0.0	5	63
64	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	59	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	63	63	0	0.0	5	64
65	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	7	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	37	0	..	..	..	..	..	..	..	..	..	..	..	..	49	49	0	0.0	7	65
66	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	5	0	11	0	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	36	0	..	..	15	0	..	..	..	..	..	..	75	75	0	0.0	9	66
67	3	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	31	0	..	..	1	0	..	..	..	..	..	..	53	53	0	0.0	11	67
68	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49	1	..	..	..	..	52	51	1	1.9	3	68
69	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	19	0	19	19	0	0.0	1	69
70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	9	39	30	9	23.1	1	70
71	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	8	0	0.0	6	71
72	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	1	..	..	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	1	0	1	0	..	..	..	..	22	21	1	5.0	8	72
73	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	22	1	..	..	1	0	11	0	..	..	..	..	16	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	0	1	2	0	..	..	..	..	91	88	3	3.3	20	73
74	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	..	..	..	..	4	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	15	15	0	0.0	7	74
75	..	..	1	0	..	..	..	..	..	..	..	..	4	0	..	..	21	2	..	..	..	..	4	0	..	..	1	0	4	0	..	..	..	..	..	..	..	..	..	..	..	..	7	0	..	..	2	0	1	0	3	0	..	..	1	0	79	75	4	5.1	18	75
76	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	3	6	66.7	3	76
77	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	100.0	1	77
78	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	10	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	0	1	0	..	..	..	..	..	..	25	25	0	0.0	8	78
79	..	..	..	..	..	..	1	1	1	0	..	..	6	1	..	..	65	44	..	..	..	..	9	5	2	0	..	..	10	4	1	2	..	..	..	..	..	..	4	0	..	..	..	..	..	..	2	0	2	2	5	4	..	..	1	1	241	149	92	38.2	25	79
80	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	0	1	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	30	25	5	16.7	10	80
81	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	0	0	0.0	0	81
82	20		161		9		127		1		2		60		1		889		81		18		298		38		52		322		16		38		9		117		102		13		47		84		22		58		112		3		86		4958	....	....	.....	...	82
83	20		151		9		124		1		2		57		1		820		80		18		289		38		45		309		14		37		9		117		101		13		47		84		22		55		106		3		74		....	4712	....	.....	...	83
84	0		7		0		3		0		0		3		0		69		1		0		9		0		7		13		2		1		0		0		1		0		0		0		0		3		6		0		12		....	....	246	.....	...	84
85	0.0		4.3		0.0		2.4		0.0		0.0		5.0		0.0		7.8		1.2		0.0		3.0		0.0		13.5		4.0		12.5		2.6		0.0		0.0		1.0		0.0		0.0		0.0		0.0		5.2		5.4		0.0		13.9		....	....	....	5.0	...	85
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE C—GRADUATES EXAMIN

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1921-1925					Graduates of 1920 and Previous					Graduates of 1925				
		Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of
	ARKANSAS																				
1	University of Arkansas Medical Department	28	27	1	3.6	5	26	25	1	3.8	4	2	2	0	0.0	2	25	25	0	0.0	4
	CALIFORNIA																				
2	College of Medical	67	65	2	3.0	7	66	64	2	3.0	6	1	1	0	0.0	1	58	57	1	1.7	3
3	Stanford University	27	27	0	0.0	2	27	27	0	0.0	2	0	0	0	0.0	0	26	26	0	0.0	1
4	University of Califo	52	52	0	0.0	6	51	51	0	0.0	6	1	1	0	0.0	1	46	46	0	0.0	3
	COLORADO																				
5	University of Colorado School of Medicine	35	35	0	0.0	7	32	32	0	0.0	6	3	3	0	0.0	3	29	29	0	0.0	4
	CONNECTICUT																				
6	Yale University School of Medicine	25	25	0	0.0	8	24	24	0	0.0	8	21	21	0	0.0	1	7	7	0	0.0	1
	DISTRIC																				
7	Georgetown Universi	46	45	1	2.2	12	44	44	0	0.0	11	2	1	1	50.0	1	21	21	0	0.0	4
8	George Washington	58	58	0	0.0	10	51	51	0	0.0	9	7	7	0	0.0	3	39	39	0	0.0	6
9	Howard University School of Medicine	85	75	10	11.8	19	82	74	8	9.8	19	3	1	2	66.7	2	60	56	4	6.7	14
	GEORGIA																				
10	Emory University School of Medicine	136	133	3	2.2	7	122	121	1	0.8	7	14	12	2	14.3	1	92	92	0	0.0	5
11	University of Georgia Medical Department	66	59	7	10.6	5	45	45	0	0.0	5	21	14	7	33.3	2	31	31	0	0.0	3
	ILLINOIS																				
12	Chicago Medical School	23	16	7	30.4	1	23	16	7	30.4	1	0	0	0	0.0	0	1	1	0	0.0	1
13	[illegible] School of Medicine	42	38	4	9.5	17	37	34	3	8.1	14	5	4	1	20.0	4	27	25	2	7.5	8
14	[illegible] School	112	107	5	4.5	23	99	98	1	1.0	20	13	9	4	30.8	7	77	77	0	0.0	18
15	[illegible] of Chicago)	146	143	3	2.1	22	130	129	1	0.8	20	16	14	2	12.9	4	89	89	0	0.0	18
16	[illegible] Medicine	82	76	6	7.3	19	67	66	1	1.5	17	15	10	5	33.3	8	56	55	1	1.8	14
	INDIANA																				
17	Indiana University School of Medicine	91	91	0	0.0	7	88	88	0	0.0	6	3	8	0	0.0	2	79	79	0	0.0	4
	IOWA																				
18	State University of Iowa College of Medicine	87	85	2	2.3	10	85	84	1	1.2	10	2	1	1	50.0	1	72	72	0	0.0	2
	KANSAS																				
19	University of Kansas School of Medicine	40	39	1	2.5	6	38	37	1	2.6	5	2	2	0	0.0	2	32	31	1	3.1	2
	KENTUCKY																				
20	University of Louisville School of Medicine	79	75	4	5.1	15	65	64	1	1.5	13	14	11	3	21.4	5	56	55	1	1.8	7
	LOUISIANA																				
21	Tulane University of Louisiana School of Medicine	128	124	4	3.1	19	111	110	1	0.9	18	17	14	3	16.7	5	81	81	0	0.0	12
	MARYLAND																				
22	Johns Hopkins University Medical Department	68	67	1	1.5	17	55	55	0	0.0	14	13	12	1	7.7	8	30	30	0	0.0	6
23	Univ of Md School of Med and Coll of P. & S	111	109	2	1.8	11	103	102	1	1.0	11	8	7	1	12.5	3	73	73	0	0.0	8
	MASSACHUSETTS																				
24	Boston University School of Medicine	54	50	4	7.4	10	52	48	4	7.7	9	2	2	0	0.0	2	33	30	3	9.1	4
5	College of Physicians and Surgeons	8	5	3	37.5	3	5	3	2	40.0	1	3	2	1	33.3	2	2	2	0	0.0	2
6	Harvard University Medical School	80	80	0	0.0	22	72	72	0	0.0	21	8	8	0	0.0	4	23	23	0	0.0	7
	Tufts College Medical School	129	125	4	3.1	15	119	116	3	2.5	13	10	9	1	10.0	5	71	71	0	0.0	5
	Middlesex College of Medicine and Surgery	14	5	9	64.3	1	14	5	9	64.3	1	0	0	0	0.0	0	1	0	1	100.0	1
	MICHIGAN																				
	University of Michigan Medical School	187	183	4	2.1	13	181	178	3	1.7	12	6	5	1	16.7	4	152	152	0	0.0	6
	Detroit College of Medicine and Surgery	51	51	0	0.0	2	50	50	0	0.0	2	1	1	0	0.0	1	49	49	0	0.0	1
	MINNESOTA																				
	University of Minnesota Medical School	126	126	0	0.0	14	125	125	0	0.0	14	1	1	0	0.0	1	64	64	0	0.0	7
	MISSOURI																				
2	Kansas City College of Medicine and Surgery	25	22	3	12.0	3	25	22	3	12.0	3	0	0	0	0.0	0	5	5	0	0.0	2
3	Kansas City University of Physicians and Surgeons	6	5	1	16.7	1	5	4	1	20.0	1	1	1	0	0.0	1	4	4	0	0.0	1
4	St Louis College of Physicians and Surgeons	44	20	24	54.5	7	42	18	24	57.1	5	2	2	0	0.0	2	7	2	5	71.4	2
5	St Louis University School of Medicine	130	126	4	3.1	19	127	123	4	3.1	19	3	3	0	0.0	2	88	84	4	4.6	11
6	Washington University School of Medicine	103	99	4	3.9	24	99	95	4	4.0	20	4	4	0	0.0	3	62	59	3	4.8	8
	NEBRASKA																				
7	Creighton University College of Medicine	47	46	1	2.1	12	45	44	1	2.2	10	2	2	0	0.0	2	38	37	1	2.6	5
38	University of Nebraska College of Medicine	106	105	1	0.9	11	106	105	1	0.9	11	0	0	0	0.0	0	92	92	0	0.0	6
	NEW YORK																				
39	Albany Medical College	18	18	0	0.0	3	14	14	0	0.0	1	4	4	0	0.0	3	13	13	0	0.0	1
40	University of Buffalo Medical Department	64	63	1	1.6	10	56	56	0	0.0	7	8	7	1	12.5	5	49	49	0	0.0	2
41	Columbia University College of Phys and Surgs	104	104	0	0.0	14	94	94	0	0.0	9	10	10	0	0.0	7	76	76	0	0.0	4
42	Cornell University Medical College	54	53	1	1.9	9	51	50	1	2.0	9	3	3	0	0.0	2	29	29	0	0.0	1
43	Long Island College	105	103	2	1.9	5	101	100	1	1.0	4	4	3	1	25.0	3	91	91	0	0.0	3
44	New York Homeo Me	36	35	1	2.8	4	33	33	0	0.0	3	3	2	1	33.3	2	32	32	0	0.0	2
45	University and Bellev	110	109	1	0.9	8	108	107	1	0.0	7	2	2	0	0.0	1	99	98	1	1.0	3
46	Syracuse University College of Medicine	40	40	0	0.0	3	40	40	0	0.0	3	0	0	0	0.0	0	35	35	0	0.0	1
	OHIO																				
47	Eclectic Me	48	41	7	14.6	8	46	41	5	10.9	7	2	0	2	100.0	2	44	40	4	9.1	6
48	University	74	74	0	0.0	12	71	71	0	0.0	11	3	3	0	0.0	2	59	59	0	0.0	4
49	Western Re	48	48	0	0.0	7	46	46	0	0.0	6	2	2	0	0.0	2	40	40	0	0.0	3
50	Ohio State	97	95	2	2.1	8	95	93	2	2.1	8	2	2	0	0.0	1	83	83	0	0.0	2
	OKLAHOMA																				
51	University of Oklahoma School of Medicine	44	43	1	2.3	7	44	43	1	2.3	7	0	0	0	0.0	0	30	30	0	0.0	3
	OREGON																				
52	University of Oregon Medical School	51	48	3	5.9	5	51	48	3	5.9	5	0	0	0	0.0	0	35	33	2	5.7	3
	PENNSYLVANIA																				
53	Hahnemann Medical College and Hosp of Phila	59	56	3	5.1	12	53	52	1	1.9	9	6	4	2	33.3	5	5	5	0	0.0	3
54	Jefferson Medical College of Philadelphia	179	174	5	2.8	23	157	157	0	0.0	21	22	17	5	22.7	7	31	31	0	0.0	7
55	Temple University School of Medicine	21	18	3	14.3	6	18	16	2	11.1	3	3	2	1	33.3	3	1	1	0	0.0	1
56	University of Pennsylvania School of Medicine	158	156	2	1.3	23	137	137	0	0.0	21	21	19	2	9.5	6	25	25	0	0.0	6
57	Woman's Medical College of Pennsylvania	24	18	6	25.0	7	21	17	4	19.0	4	3	1	2	66.7	3	2	1	1	50.0	1
58	University of Pittsburgh School of Medicine	46	45	1	2.2	8	43	42	1	2.3	6	3	3	0	0.0	3	4	4	0	0.0	3
	SOUTH CAROLINA																				
59	Medical College of the State of South Carolina	50	50	0	0.0	7	42	42	0	0.0	6	8	8	0	0.0	2	37	37	0	0.0	5
	TENNESSEE																				
60	University of Tennessee College of Medicine	78	74	4	5.1	13	73	72	1	1.4	12	5	2	3	60.0	3	64	64	0	0.0	9
61	Meharry Medical College	76	60	16	21.1	20	64	54	10	15.6	18	12	6	6	50.0	5	40	39	1	2.5	10
62	Vanderbilt University School of Medicine	83	75	8	9.6	11	60	58	2	3.3	10	23	17	6	26.1	4	47	47	0	0.0	5
	TEXAS																				
63	Baylor University College of Medicine	31	31	0	0.0	5	31	31	0	0.0	5	0	0	0	0.0	0	28	28	0	0.0	3
64	University of Texas School of Medicine	64	64	0	0.0	6	63	63	0	0.0	5	1	1	0	0.0	1	60	60	0	0.0	3

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1921-1925					Graduates of 1920 and Previous					Graduates of 1925					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent Failed	Number of States	
	VERMONT																					
65	University of Vermont College of Medicine	52	51	1	1.9	8	49	49	0	0.0	7	3	2	1	33.3	2	39	39	0	0.0	3	65
	VIRGINIA																					
66	Medical College of Virginia	84	84	0	0.0	9	75	75	0	0.0	9	9	9	0	0.0	3	63	63	0	0.0	5	66
67	University of Virginia Department of Medicine	55	55	0	0.0	10	53	53	0	0.0	11	2	2	0	0.0	1	40	40	0	0.0	7	67
	WISCONSIN																					
68	Marquette University School of Medicine	52	51	1	1.9	3	52	51	1	1.9	3	0	0	0	0.0	0	51	50	1	2.0	2	68
	PHILIPPINE ISLANDS																					
69	University of the *Philippines, Manila*	19	19	0	0.0	1	19	19	0	0.0	1	0	0	0	0.0	0	19	19	0	0.0	1	69
70	University of St. Thomas, Manila	41	32	9	22.0	2	39	30	9	23.1	1	2	2	0	0.0	2	36	29	7	19.4	1	70
	CANADA																					
71	Dalhousie University Faculty of Medicine	8	8	0	0.0	6	8	8	0	0.0	6	0	0	0	0.0	0	1	1	0	0.0	1	71
72	Queen's University Faculty of Medicine	37	32	5	13.5	11	22	21	1	5.0	8	15	11	4	26.7	6	0	0	0	0.0	0	72
73	University of Toronto Faculty of Medicine	118	111	7	5.9	22	91	88	3	3.3	20	27	23	4	14.8	8	3	3	0	0.0	2	73
74	University of Western Ontario Medical School	21	20	1	4.8	10	15	15	0	0.0	7	6	5	1	16.7	6	1	1	0	0.0	1	74
75	McGill University Faculty of Medicine	93	88	5	5.4	20	79	75	4	5.1	18	14	13	1	7.2	9	10	10	0	0.0	4	75
76	University of Montreal Medical Faculty	9	3	6	66.7	3	9	3	6	66.7	3	0	0	0	0.0	0	3	1	2	66.7	1	76
77	Laval University Faculty of Medicine	4	1	3	75.0	3	1	0	1	100.0	1	3	1	2	66.7	2	1	0	1	100.0	1	77
78	University of Manitoba Faculty of Medicine	29	29	0	0.0	9	25	25	0	0.0	8	4	4	0	0.0	4	11	11	0	0 0	5	78
79	Foreign Colleges	523	318	205	39.2	31	241	149	92	38.2	25	282	169	113	40.1	26	3	2	1	33.3	3	79
80	Miscellaneous Medical Colleges	243	159	84	31.7	32	30	25	5	16.7	10	213	134	79	32.4	29	0	0	0	0.0	0	80
81	Undergraduates and Osteopaths	62	29	33	53.2	9	0	0	0	0.0	0	0	0	0	0.0	0	0	0	0	0.0	0	81
82	Totals by States	5956	......	......	......	....	4958	......	......	......	....	936	......	......	......	....	3138	......	......	......	....	82
83	Totals — Examined — Passed	......	5404	......	......	....	......	4712	......	......	....	......	663	......	......	....	......	3090	......	......	....	83
84	Totals — Examined — Failed	......	......	552	......	....	......	......	246	......	....	......	......	273	......	....	......	......	48	......	....	84
85	Percentage of Failures	......	......	......	9.3	....	......	......	......	5.0	....	......	......	......	29.2	....	......	......	......	1.5	....	85

(CONTINUED FROM PAGE 1533)

or 83.2 per cent, were recent graduates, and of this number 5 per cent failed, as compared with 9.3 per cent for all candidates.

Old Practitioners Examined During 1925

Table C is arranged so as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1920 and previous years (third column), and for graduates of 1925 (fourth column). Of the graduates of 1920 and previous years—"old practitioners"—936 were examined, and of this number 273, or 29.2 per cent, failed, as compared with 5 per cent of failures for recent graduates. The numbers of these candidates will be diminished (see table 3) as state licensing boards extend their provisions for reciprocity, or the endorsement without further examination of a license granted by another state where a physician's qualifications are otherwise satisfactory. As a rule, states that have limited or no reciprocal relations with other states (Florida and New York—see table F) examine larger numbers of old practitioners.

Graduates of 1925 Examined During 1925

Table C also gives the results for the graduates of 1925 who were examined during the year by the state boards, and shows that 3,138, or 52.7 per cent, of all candidates examined during the year graduated in 1925, including thirty who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 3,974 students last year; therefore, 79 per cent of all graduates of 1925 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which accounts for some of the remaining 21 per cent. Of the 3,138 graduates of 1925 who were examined, forty-eight, or 1.5 per cent, failed.

Nonrecognition of Medical Colleges

Table D shows for each college, from official reports, the states in which its diplomas are not given full recognition. This table also shows the latest rating given to each college by the Council on Medical Education and Hospitals. For the student who is selecting a medical college, the facts in table D are of extreme importance. There are sixty-six, or 82.5 per cent, of all medical colleges which have complete recognition in all states. There are five others for which the few instances of nonrecognition are due to certain technicalities in state board requirements. If the student gets his medical training in one of the remaining nine colleges, however, he will find on graduation that he cannot secure a license to practice in from seven to forty-eight states.

During the thirteen years that table D has been published, the proportion of fully recognized colleges has increased from 29 per cent in 1913 to 82.5 per cent in 1925.

Of the fifty states—counting in Alaska and the District of Columbia—the state licensing boards of forty-eight, to some extent at least, are now utilizing their legal power to refuse recognition to medical colleges that do not meet their educational requirements. In the other two states, the boards do not have the authority to enforce reasonable standards. In Arkansas and Connecticut, although the regular medical boards are debarring graduates of low-grade colleges, such candidates have been licensed by the separate eclectic boards.

Table 2.—*Recognition of Medical Colleges (Based on Table D)*

	Number of Colleges				
	1914	1917	1920	1924	1925
Recognized by all state boards	31	55	63	64	66
Not recognized in 1 to 9 states	33	17	16	7	5
Not recognized in 10 to 32 states	43	20	6	3	3
Not recognized in 33 to 37 states	..	6	..	..	..
Not recognized in 38 to 44 states	..	..	9	..	..
Not recognized in 45 to 48 states	..	.	..	6	6
Totals	107	98	88	80	80

It is evident that if the graduates of inferior medical colleges are not eligible for license in the majority of states, they will flock to the few that still grant such recognition. The following states, therefore—Arkansas (eclectic board), Massachusetts and the District of Columbia—will remain the dumping ground for the output of low-grade medical colleges until the licensing boards obtain and exercise the needed authority to bar them. Illinois will be the chief recipient of the graduates of the Chicago Medical School, which is recognized in that state.

Study of Totals and Percentages

A study of totals and percentages (table 3) as compared with previous years is of interest. The number, 5,956, examined in 1925 was 606 more than were examined in 1924, 1,258

(CONTINUED ON PAGE 1543)

TABLE D—RECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an [illegible] for the license to practice medicine

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

	COLLEGE	Classification by Council on Medical Education †	1 Alabama	2 Alaska	3 Arizona	4 Arkansas	5 California	6 Colorado	7 Connecticut	8 Delaware	9 District of Columbia	10 Florida	11 Georgia	12 Idaho	13 Illinois	14 Indiana	15 Iowa	16 Kansas	17 Kentucky	18 Louisiana	19 Maine	20 Maryland	21 Massachusetts	22 Michigan	23 Minnesota	24 Mississippi	25 Missouri	26 Montana	27 Nebraska	28 Nevada	29 New Hampshire	30 New Jersey	31 New Mexico	32 New York	33 North Carolina	34 North Dakota	35 Ohio	36 Oklahoma	37 Oregon	38 Pennsylvania	39 Rhode Island	40 South Carolina	41 South Dakota	42 Tennessee	43 Texas	44 Utah	45 Vermont	46 Virginia	47 Washington	48 West Virginia	49 Wisconsin	50 Wyoming	No. of State Boards reporting full recognition	No. of State Boards reporting not recognized	Percentage of State Boards reporting full recognition	Marginal Number
1	Albany Medical College	A																						x																													49	1	98	1
2	Baylor University School of Medicine	A																																																			50		100	2
3	Boston University School of Medicine	A																																																			50		100	3
4	Chicago Medical School [1]	C	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	47	6	4
5	College of Medical Evangelists	A													x																x													x									47	3	94	5
6	College of Physicians and Surgeons, Boston	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	6
7	Columbia University College of Physicians and Surg.	A																																																			50		100	7
8	Cornell University Medical College	A																																																			50		100	8
9	Creighton University College of Medicine	A																																																			50		100	9
10	Dartmouth Medical School *	A																																																			50		100	10
11	Detroit College of Medicine and Surgery	A																																																			50		100	11
12	Eclectic Medical College	B	x							x				x			x											x			x				x				x		x	x	x					x				x	37	13	74	12
13	Emory University Medical College	A																																																			50		100	13
14	Georgetown University School of Medicine	A																																																			50		100	14
15	George Washington University Medical School	A																																																			50		100	15
16	Hahnemann Med. College and Hospital, Philadelphia	A																																																			50		100	16
17	Harvard University Medical School	A																																																			50		100	17
18	Howard University School of Medicine	A																																																			50		100	18
19	Indiana University School of Medicine	A																																																			50		100	19
20	Jefferson Medical College	A																																																			50		100	20
21	Johns Hopkins University Medical Department	A																																																			50		100	21
22	Kansas City College of Medicine and Surgery [2]	C	x			x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	4	46	8	22
23	Kansas City University of Physicians and Surgeons [3]	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	23
24	Long Island College Hospital	A																																																			50		100	24
25	Loyola University Medical Department	A																																																			50		100	25
26	Marquette University School of Medicine	A																																																			50		100	26
27	Medical College of the State of South Carolina	A																																																			50		100	27
28	Medical College of Virginia	A																																																			50		100	28
29	Meharry Medical College	A																						x										x																			48	2	96	29
30	Middlesex College of Medicine and Surgery	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	30
31	New York Homeo. Med. College and Flower Hospital	B	x			x								x			x	x										x			x				x			x	x		x	x	x	x				x		x		x	33	17	66	31
32	Northwestern University Medical School	A																																																			50		100	32
33	Ohio State University College of Medicine	A																																																			50		100	33
34	Rush Medical College (University of Chicago)	A																																																			50		100	34
35	St. Louis College of Physicians and Surgeons	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	35
36	St. Louis University School of Medicine	A																																																			50		100	36
37	Stanford University School of Medicine	A																																																			50		100	37
38	State University of Iowa College of Medicine	A																																																			50		100	38
39	Syracuse University College of Medicine	A																																																			50		100	39
40	Temple University School of Medicine	B	x			x						x		x	x		x	x						x			x	x			x	x		x	x				x		x	x	x	x				x		x		x	28	22	56	40
41	Tufts College Medical School	A																																																			50		100	41
42	Tulane University School of Medicine	A																																																			50		100	42
43	University and Bellevue Hospital Medical College	A																						x																													49	1	98	43
44	University of Alabama School of Medicine *	A																																																			50		100	44
45	University of Arkansas Medical Department	A																						x																													49	1	98	45
46	University of Buffalo Medical Department	A																																																			50		100	46
47	University of California Medical School	A																																																			50		100	47
48	University of Cincinnati Medical College	A																																																			50		100	48
49	University of Colorado School of Medicine	A																																																			50		100	49
50	University of Georgia Medical Department	A																																																			50		100	50
51	University of Illinois College of Medicine	A																																																			50		100	51
52	University of Kansas School of Medicine	A																																																			50		100	52
53	University of Louisville School of Medicine	A																																																			50		100	53
54	Univ. of Md. School of Med. and Coll. of P. and S.	A																																																			50		100	54
55	University of Michigan Medical School	A																																																			50		100	55

56	University of Minnesota Medical School..................	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	56
57	University of Mississippi Department of Medicine*.....	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	57
58	University of Missouri School of Medicine*............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	58
59	University of Nebraska College of Medicine............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	59
60	University of North Carolina School of Medicine*.....	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	60
61	University of North Dakota School of Medicine*.......	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	61
62	University of Oklahoma School of Medicine............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	62
63	University of Oregon Medical Department..............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	63
64	University of Pennsylvania School of Medicine.........	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	64
65	University of Pittsburgh School of Medicine............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	65
66	University of Rochester School of Medicine.............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	66
67	University of South Dakota College of Medicine*......	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	67
68	University of Tennessee College of Medicine............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	68
69	University of Texas School of Medicine.................	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	69
70	University of Utah School of Medicine*................	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	70
81	University of Vermont College of Medicine..............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	71
82	University of Virginia School of Medicine..............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	72
73	University of Wisconsin Medical School*...............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	73
74	Vanderbilt University School of Medicine...............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	74
75	Wake Forest College School of Medicine*...............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	75
76	Washington University Medical School..................	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	76
77	Western Reserve University School of Medicine.........	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	77
78	West Virginia University School of Medicine...........	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	78
19	Woman's Medical College of Pennsylvania..............	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	79
80	Yale University School of Medicine.....................	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	80
	Number of Medical Colleges, reported not recognized....		9		5	8	6	6	6	7	..	7	6	9	7	6	9	8	6	6	6	6	..	11	6	6	7	9	3	3	10	7	6	9	9	6	6	7	9	6	9	9	9	9	6	6	6	9	6	8	6	9				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				

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* Ten medical colleges give only the first two years of the medical course.

† Classification revised to May 15, 1926.

1. Formerly the Chicago Hospital College of Medicine. Has advertised also under the name of "Fort Dearborn Hospital School."

2. This college claims to be an eclectic college, but is reported as not recognized by the National Eclectic Medical Association. It is an offshoot of the Eclectic Medical University, an institution which during its existence was rated in Class C. The new college has refused inspection. This school, and the St. Louis College of Physicians and Surgeons, were involved in the Missouri diploma mill scandal in 1923-1924.

3. Formerly the Central College of Osteopathy; in 1917 became the Central College Medical Department; present title in 1918.

4. These schools have not been inspected by the Pennsylvania Bureau of Medical Education and Licensure.

(x) According to official reports the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of the colleges marked by this letter—x.

(CONTINUED FROM PAGE 1541)

more than in 1923, and 1,963 more than in 1922. The fluctuations in the numbers examined indicate similar fluctuations in the numbers of graduates in the various years. Indications are that the totals will be gradually increased during the next five years. By all methods—examination, reciprocity under exemption, etc.—7,194 physicians were *licensed* during 1925, 641 more than in 1924, 873 more than in 1923, but 671 less than in 1906, when 7,865 physicians were licensed. The number of physicians licensed in 1925 is the largest since 1910, but includes physicians (see table 4) having decidedly higher qualifications.

Totals Examined in Five Years

Table E shows the number registered and the number rejected in each state by examination for each of the last five years. A comparison of this table with the statistics in the last educational number of The Journal (Aug. 22, 1925, p. 593, table 11) shows—what would be expected—that the states having the largest numbers of medical graduates examined the largest numbers of physicians. New York leads, having examined 4,475 candidates in five years, followed by Illinois, with 1,998. Altogether, 24,804 physicians were *examined* by state boards in five years, an average of 4,961 each year, and, of these, 4,365, or 88 per cent, were licensed each year.

Table 3.—*Results for This and Previous Years*

Year	All Candidates Examined				Recent Graduates		Older Graduates		Nondescript		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	20.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	60.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	...	...	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	...	....	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	...	....	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584
1920	4787	4053	734	15.3	3984	11.5	738	33.2	65	50.8	2504	6557
1921	4807	4211	596	12.4	4046	7.8	673	37.3	88	33.0	2137	6348
1922	3993	3501	492	12.3	3285	7.4	563	33.3	83	49.7	1996	5497
1923	4698	3998	700	14.9	3985	10.8	655	38.0	58	34.5	2323	6321
1924	5350	4713	637	11.9	4490	7.3	826	36.5	34	17.6	1840	6553
1925	5956	5404	552	9.3	4958	5.0	936	29.2	62	53.2	1790	7194

Total Registration in 1925

The tables thus far described have referred only to those registered by examination. Table F, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether, 7,194 physicians were registered by all methods during 1925, the largest number since 1910. The total registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun, owing undoubtedly to the war. In 1906 the total number registered was 7,865, which was the largest number registered in any year.

More than 100 were registered by all methods in twenty-three states; more than 200 in nine, and more than 300 in seven, the largest numbers being 1,078 in New York, 584 in California, 438 in Florida and 383 in Ohio.

Of those licensed in California, 291, or 49.8 per cent, were registered by the endorsement of licenses granted by other states. Several boards examined and licensed osteopaths as "physicians and surgeons." Massachusetts licensed thirteen, Texas five, Colorado three and Wisconsin two. Altogether, twenty-three osteopaths—graduates of colleges decidedly inferior to the lowest grade medical schools—were licensed as physicians and surgeons.

TABLE D—RECOGNITION OF MEDICAL COLLEGES

This table, based on official reports, shows in what states diplomas granted by certain medical colleges are not recognized as an acceptable qualification for the license to practice medicine

Colleges marked (x) have been reported as not recognized by the states in the columns of which the letter appears

																																																					Reported Non-Recognition by State Licensing Boards			
	COLLEGE	Classification by Council on Medical Education†	1 Alabama	2	3	4	5	6	7	8	9	10 Florida	11 Georgia	12 Idaho	13 Illinois	14 Indiana	15 Iowa	16 Kansas	17 Kentucky	18 Louisiana	19 Maine	20	21	22	23	24	25	26	27	28 Nevada	29 New Hampshire	30 New Jersey	31 New Mexico	32 New York	33 North Carolina	34 North Dakota	35 Ohio	36 Oklahoma	37 Oregon	38 Pennsylvania	39 Rhode Island	40 South Carolina	41 South Dakota	42 Tennessee	43 Texas	44 Utah	45 Vermont	46	47	48	49	50 Wyoming	No. of State Boards reporting full recognition	No. of State Boards reporting college not recognized	Percentage of State Boards reporting full recognition	Marginal Number
1	Albany Medical College	A																						x																													49	1	98	1
2	Baylor University School of Medicine	A																																																				50	..	100	2
3	Boston University School of Medicine	A																																																				50	..	100	3
4	Chicago Medical School[1]	C	x	x	x	x	x	x	x	x		x	x	x		x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	3	47	6	4
5	College of Medical Evangelists	A													x																x															x									47	3	94	5
6	College of Physicians and Surgeons, Boston	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	6
7	Columbia University College of Physicians and Surg.	A																																																				50	..	100	7
8	Cornell University Medical College	A																																																				50	..	100	8
9	Creighton University College of Medicine	A																																																				50	..	100	9
10	Dartmouth Medical School*	A																																																				50	..	100	10
11	Detroit College of Medicine and Surgery	A																																																				50	..	100	11
12	Eclectic Medical College	B	x							x				x			x											x			x				x				x		x	x	x					x				x	37	13	74	12
13	Emory University Medical College	A																																																				50	..	100	13
14	Georgetown University School of Medicine	A																																																				50	..	100	14
15	George Washington University Medical School	A																																																				50	..	100	15
16	Hahnemann Med. College and Hospital, Philadelphia	A																																																				50	..	100	16
17	Harvard University Medical School	A																																																				50	..	100	17
18	Howard University School of Medicine	A																																																				50	..	100	18
19	Indiana University School of Medicine	A																																																				50	..	100	19
20	Jefferson Medical College	A																																																				50	..	100	20
21	Johns Hopkins University Medical Department	A																																																				50	..	100	21
22	Kansas City College of Medicine and Surgery[2]	C	x			x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	4	46	8	22
23	Kansas City University of Physicians and Surgeons[3]	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	23
24	Long Island College Hospital	A																																																				50	..	100	24
25	Loyola University Medical Department	A																																																				50	..	100	25
26	Marquette University School of Medicine	A																																																				50	..	100	26
27	Medical College of the State of South Carolina	A																																																				50	..	100	27
28	Medical College of Virginia	A																																																				50	..	100	28
29	Meharry Medical College	A																						x										x																			48	2	96	29
30	Middlesex College of Medicine and Surgery	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	30
31	New York Homeo. Med. College and Flower Hospital	B	x			x								x			x	x										x			x				x			x	x		x	x	x	x				x		x		x	33	17	66	31
32	Northwestern University Medical School	A																																																				50	..	100	32
33	Ohio State University College of Medicine	A																																																				50	..	100	33
34	Rush Medical College (University of Chicago)	A																																																				50	..	100	34
35	St. Louis College of Physicians and Surgeons	C	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	2	48	4	35
36	St. Louis University School of Medicine	A																																																				50	..	100	36
37	Stanford University School of Medicine	A																																																				50	..	100	37
38	State University of Iowa College of Medicine	A																																																				50	..	100	38
39	Syracuse University College of Medicine	A																																																				50	..	100	39
40	Temple University School of Medicine	B	x			x						x		x	x		x	x						x			x	x			x	x		x	x				x		x	x	x	x				x		x		x	28	22	56	40
41	Tufts College Medical School	A																																																				50	..	100	41
42	Tulane University School of Medicine	A																																																				50	..	100	42
43	University and Bellevue Hospital Medical College	A																						x																													49	1	98	43
44	University of Alabama School of Medicine*	A																																																				50	..	100	44
45	University of Arkansas Medical Department	A																						x																													49	1	98	45
46	University of Buffalo Medical Department	A																																																				50	..	100	46
47	University of California Medical School	A																																																				50	..	100	47
48	University of Cincinnati Medical College	A																																																				50	..	100	48
49	University of Colorado School of Medicine	A																																																				50	..	100	49
50	University of Georgia Medical Department	A																																																				50	..	100	50
51	University of Illinois College of Medicine	A																																																				50	..	100	51
52	University of Kansas School of Medicine	A																																																				50	..	100	52
53	University of Louisville School of Medicine	A																																																				50	..	100	53
54	Univ. of Md. School of Med. and Coll. of P. and S.	A																																																				50	..	100	54
55	University of Michigan Medical School	A																																																				50	..	100	55

			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				
56	University of Minnesota Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	56
57	University of Mississippi Department of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	57
58	University of Missouri School of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	58
59	University of Nebraska College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	59
60	University of North Carolina School of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	60
61	University of North Dakota School of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	61
62	University of Oklahoma School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	62
63	University of Oregon Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	63
64	University of Pennsylvania School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	64
65	University of Pittsburgh School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	65
66	University of Rochester School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	66
67	University of South Dakota College of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	67
68	University of Tennessee College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	68
69	University of Texas School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	69
70	University of Utah School of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	70
81	University of Vermont College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	71
82	University of Virginia School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	72
73	University of Wisconsin Medical School *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	73
74	Vanderbilt University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	74
75	Wake Forest College School of Medicine *	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	75
76	Washington University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	76
77	Western Reserve University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	77
78	West Virginia University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	78
19	Woman's Medical College of Pennsylvania	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	79
80	Yale University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50	..	100	80
	Number of Medical Colleges reported not recognized		9		5	8	6	6	6	7	..	7	6	9	7	6	9	8	8	6	6	6	..	11	6	6	7	9	3	3	10	7	6	9	9	6	6	7	9	6	9	9	9	9	6	6	6	9	6	8	6	9				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50				

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* Ten medical colleges give only the first two years of the medical course.

† Classification revised to May 15, 1926.

1. Formerly the Chicago Hospital College of Medicine. Has advertised also under the name of "Fort Dearborn Hospital School."

2. This college claims to be an eclectic college, but is reported as not recognized by the *National Eclectic Medical Association*. It is an *offshoot of* the *Eclectic Medical University*, an *institution* which during its existence was rated in *Class C*. The new college has refused inspection. This school, and the St. Louis College of Physicians and Surgeons, were involved in the Missouri diploma mill scandal in 1923-1924.

3. Formerly the Central College of Osteopathy; in 1917 became the Central College Medical Department; *present title* in 1918.

4. These schools have not been *inspected* by the Pennsylvania Bureau of Medical Education and Licensure.

(x) *According to official reports the licensing boards of the states thus indicated do not grant* full recognition to, or have taken action refusing to admit to their examinations graduates of the colleges marked by *this* letter—x.

(CONTINUED FROM PAGE 1541)

more than in 1923, and 1,963 more than in 1922. The fluctuations in the numbers examined indicate similar fluctuations in the numbers of graduates in the various years. Indications are that the totals will be gradually increased during the next five years. By all methods—examination, reciprocity under exemption, etc.—7,194 physicians were *licensed* during 1925, 641 more than in 1924, 873 more than in 1923, but 671 less than in 1906, when 7,865 physicians were licensed. The number of physicians licensed in 1925 is the largest since 1910, but includes physicians (see table 4) having decidedly higher qualifications.

Totals Examined in Five Years

Table E shows the number registered and the number rejected in each state by examination for each of the last five years. A comparison of this table with the statistics in the last educational number of The Journal (Aug. 22, 1925, p. 593, table 11) shows—what would be expected—that the states having the largest numbers of medical graduates examined the largest numbers of physicians. New York leads, having examined 4,475 candidates in five years, followed by Illinois, with 1,998. Altogether, 24,804 physicians were *examined* by state boards in five years, an average of 4,961 each year, and, of these, 4,365, or 88 per cent, were licensed each year.

Table 3.—*Results for This and Previous Years*

Year	All Candidates Examined				Recent Graduates		Older Graduates		Nondescript		Registered without Written Examination	Total Registered
	Examined	Passed	Failed	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed	Examined	Percentage Failed		
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	6723
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	...	...	1338	5461
1917	4730	4061	669	14.1	4015	10.1	564	32.6	...	....	1362	5423
1918	3637	3154	483	13.3	2984	9.3	479	30.5	...	...	1031	4185
1919	4736	4060	676	14.3	3904	10.5	766	30.8	66	47.0	2521	6584
1920	4787	4053	734	15.3	3984	11.5	738	33.2	65	50.8	2504	6557
1921	4807	4211	596	12.4	4046	7.8	673	37.3	88	33.0	2137	6348
1922	3993	3501	492	12.3	3285	7.4	563	33.3	83	49.7	1996	5497
1923	4698	3998	700	14.9	3985	10.8	655	38.0	58	34.5	2323	6321
1924	5350	4713	637	11.9	4490	7.3	826	36.5	34	17.6	1840	6553
1925	5956	5404	552	9.3	4958	5.0	936	29.2	62	53.2	1790	7194

Total Registration in 1925

The tables thus far described have referred only to those registered by examination. Table F, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether, 7,194 physicians were registered by all methods during 1925, the largest number since 1910. The total registered in 1918—4,185—was the lowest number registered in any year since the publication of these statistics was begun, owing undoubtedly to the war. In 1906 the total number registered was 7,865, which was the largest number registered in any year.

More than 100 were registered by all methods in twenty-three states; more than 200 in nine, and more than 300 in seven, the largest numbers being 1,078 in New York, 584 in California, 438 in Florida and 383 in Ohio.

Of those licensed in California, 291, or 49.8 per cent, were registered by the endorsement of licenses granted by other states. Several boards examined and licensed osteopaths as "physicians and surgeons." Massachusetts licensed thirteen, Texas five, Colorado three and Wisconsin two. Altogether, twenty-three osteopaths—*graduates of colleges decidedly* inferior to the lowest grade medical schools—were licensed as physicians and surgeons.

Total Registration in Five Years

Table G permits the reader to note the registrations in each state for the last five years. In the totals registered there was a decrease during the first two years, but an increase during the last three.

In 1925, the total registered was 7,194, an increase of 641. Regardless of the general increases in the numbers registered in 1925, marked decreases are noted in Massachusetts, 113, in New Jersey, 50, and in Missouri, 26. The largest increases in registration were in Florida, 281; New York, 197; Texas, 141; Iowa, 38; Oregon, 36; Nebraska, 35, and Maryland, 28. During the last five years, New York registered 4,340, the highest number, followed by California with 3,125; Illinois with 1,951; Ohio with 1,665; Pennsylvania with 1,613, and Michigan with 1,386. The three lowest registrations are Delaware with 71, Wyoming with 79, and New Hampshire with 82.

Table E.—*Physicians Examined by State Boards 1921 to 1925, Inclusive*

STATES	1921		1922		1923		1924		1925		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	37	3	31	1	36	2	25	1	26	1	163	155	8	4.9
Arizona	6	10	7	2	6	2	6	0	5	0	44	30	14	31.8
Arkansas	46	6	30	1	50	4	32	1	48	0	218	206	12	5.5
[illegible]	[illegible]	56	208	67	185	68	250	80	293	38	1429	1120	309	21.7
[illegible]	[illegible]	16	32	34	51	19	40	15	52	17	320	219	101	30.9
[illegible]	[illegible]	27	114	26	77	19	83	22	49	14	576	468	108	18.7
[illegible]	8	0	17	0	5	0	8	1	4	1	44	42	2	4.5
Dist. of Columbia	42	11	54	7	57	6	68	13	105	2	365	326	39	10.6
Florida	50	24	56	21	72	28	147	39	437	100	974	762	212	21.7
Georgia	68	0	68	1	80	1	80	0	86	0	384	382	2	5.2
Idaho	14	0	11	0	9	0	5	0	9	0	48	48	0	0.0
Illinois	348	61	286	68	350	105	364	81	296	39	1998	1644	354	17.8
Indiana	65	0	35	1	67	0	78	0	96	0	342	341	1	0.3
Iowa	61	0	49	0	53	0	59	0	89	1	312	311	1	0.3
Kansas	46	1	28	5	31	0	47	0	65	0	223	217	6	2.7
Kentucky	54	5	37	4	38	3	54	0	58	2	255	241	14	5.5
Louisiana	74	7	55	4	66	0	73	1	72	2	354	340	14	4.0
Maine	35	2	28	0	28	0	59	0	40	3	195	190	5	2.6
Maryland	123	7	74	3	91	5	96	4	115	6	524	499	25	4.6
Massachusetts	[illegible]	93	244	56	219	62	260	68	146	68	1441	1094	347	24.1
[illegible]	[illegible]	2	119	4	202	2	224	2	268	2	1001	989	12	1.2
[illegible]	[illegible]	1	107	3	83	0	115	0	135	0	564	560	4	0.7
[illegible]	15	2	27	2	22	4	20	1	28	0	121	112	9	7.4
Missouri	132	12	107	16	145	29	182	16	165	11	815	731	84	10.3
Montana	17	2	11	2	17	1	18	1	13	1	83	76	7	8.4
Nebraska	76	3	42	0	94	0	85	3	124	5	432	421	11	2.5
Nevada	3	1	13	1	7	2	7	0	2	0	36	32	4	11.1
New Hampshire	4	1	12	0	4	0	3	0	3	0	27	26	1	3.7
New Jersey	26	3	25	10	52	14	66	10	74	6	286	243	43	14.7
New Mexico	1	0	0	0	0	0	0	0	1	0	2	0	0	0.0
New York	806	128	599	80	675	153	788	177	933	136	4475	3801	674	15.1
North Carolina	61	4	37	8	65	5	89	1	80	1	341	322	19	5.6
North Dakota	6	5	6	2	11	1	3	0	18	3	55	44	11	20.0
Ohio	207	14	183	6	222	4	255	22	306	13	1232	1173	59	4.4
Oklahoma	38	1	20	2	27	3	15	0	38	0	144	138	6	4.2
Oregon	31	12	23	7	19	4	41	7	51	9	204	165	39	19.1
Pennsylvania	303	34	265	18	215	20	302	11	335	24	1527	1420	107	7.0
Rhode Island	27	1	27	0	26	1	20	3	25	2	132	125	7	5.3
South Carolina	28	2	24	1	40	0	34	2	38	1	170	164	6	3.5
South Dakota	19	1	19	0	21	0	21	1	14	0	96	94	2	2.1
Tennessee	102	0	65	1	100	0	116	0	119	0	503	502	1	0.2
Texas	77	1	77	0	75	0	98	1	110	5	444	437	7	1.4
Utah	17	1	11	3	10	1	8	0	13	0	64	59	5	7.8
Vermont	31	0	19	0	24	0	34	0	52	0	160	160	0	0.0
Virginia	61	4	55	0	71	2	76	1	87	0	357	350	7	2.0
Washington	20	7	6	6	11	0	30	1	27	2	110	94	16	14.5
West Virginia	37	11	42	9	47	4	61	4	57	9	281	244	37	13.1
Wisconsin	59	6	60	3	59	0	102	9	115	12	425	395	30	7.1
Wyoming	4	1	8	3	3	1	3	1	4	0	28	22	6	21.4
U. S. Territories and Possessions	42	7	28	4	80	125	63	37	78	16	480	291	189	39.5
Totals	4,807		3,993		4,698		5,350		5,956		24,804			
Registered	4,211		3,501		3,998		4,718		5,404		21,827			
Rejected	596		492		700		637		552		2,977			
Per cent rejected	12.4		12.3		14.9		11.9		9.3		12.0			

This table gives the number of physicians who passed and failed in the examinations in each state during the last five years. The last four columns give the total and the percentage rejected by each state in the five year period. Seven states registered over 1,000 candidates by examination in the five years—New York, Illinois, Pennsylvania, Massachusetts, California, Ohio and Michigan. Altogether 21,827 physicians were registered by examination in the five years, an average of 4,365 each year.

The five states having the highest percentages of failures in the five years were Arizona 31.8, Colorado 30.9, Massachusetts 24.1, Florida 21.7, and California 21.7. Colorado and Massachusetts admitted osteopaths to their examinations as physicians and surgeons and would be expected to have high percentages. On the other hand, in most states the boards refuse to recognize low-grade colleges (see table D) and thereby eliminate inferior candidates prior to the examination, and correspondingly the percentages of failures at examinations are lower. For example, Tennessee rejected only 0.2 per cent of those who took its examinations, but refused to admit graduates of six inferior medical colleges to its examinations. In Idaho, New Mexico and Vermont there were no failures. The next lowest failure percentages were in Indiana, 0.3; Iowa, 0.3, and Minnesota, 0.7.

Table F.—*Registration by State Boards During the Year 1925*

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1921-1925	Graduates, 1920 and Previous	Nongraduates and Graduates of Nondescript Colleges			
Alabama	25	1	..	21	..	47
Arizona	2	2	1	25	..	30
Arkansas	39	8	1	32	..	80
California	255	38	..	291	..	584
Colorado	43	5	4	56	..	108
Connecticut	48	1	..	67	..	116
Delaware	3	1	..	8	..	12
District of Columbia	96	9	..	14	..	119
Florida	177	260	..	1	..	438
Georgia	85	1	..	12	..	98
Idaho	5	4	..	6	..	15
Illinois	269	27	..	62	..	358
Indiana	96	..	..	65	..	161
Iowa	83	6	..	50	..	139
Kansas	59	6	..	28	..	93
Kentucky	54	3	1	36	..	94
Louisiana	69	3	..	9	..	81
Maine	36	4	..	11	..	51
Maryland	110	5	..	24	..	139
Massachusetts	121	12	13	7	..	153
Michigan	254	14	..	67	..	335
Minnesota	134	1	..	70	..	205
Mississippi	20	6	2	13	..	41
Missouri	154	11	..	..	..	165
Montana	9	4	..	11	..	24
Nebraska	124	..	..	10	..	134
Nevada	1	1	..	9	..	11
New Hampshire	2	1	..	17	..	20
New Jersey	57	17	..	..	..	74
New Mexico	1	..	..	20	..	21
New York	820	113	..	139	6	1,078
North Carolina	80	..	..	38	..	118
North Dakota	18	..	..	12	..	30
Ohio	289	17	..	77	..	383
Oklahoma	38	..	..	29	..	67
Oregon	45	6	..	42	..	93
Pennsylvania	309	26	..	32	..	367
Rhode Island	14	11	..	..	..	25
South Carolina	37	1	..	13	..	51
South Dakota	9	5	..	10	..	24
Tennessee	117	2	..	..	..	119
Texas	101	4	5	132	..	242
Utah	13	..	..	13	..	26
Vermont	47	5	..	7	..	59
Virginia	84	3	..	30	..	117
Washington	22	5	..	86	..	113
West Virginia	55	2	..	23	..	80
Wisconsin	106	7	2	50	..	165
Wyoming	3	1	..	8	..	12
U. S. Terr. and Poss.	74	4	..	1	..	79
Totals	4,712	663	29	1,784	6	7,194

This table shows the numbers registered in each state during 1925 by examination, by reciprocity, and by endorsement [illegible] The first three columns show those regis[illegible]luding recent graduates, older practitioners [illegible]duates of nondescript colleges, including any [illegible] licensed as physicians and surgeons. The fourth column shows the number registered by the endorsement of licenses issued by other states (reciprocity) and by certificates of the Army, Navy, Public Health Service and the National Board of Medical Examiners. The fifth column shows those licensed under various exemption clauses in the practice acts—because of high professional standing or by the endorsement of diplomas of recognized medical schools. Massachusetts licensed 13 osteopaths as physicians and surgeons; Texas, 5; Colorado, 3 and Wisconsin, 2. The last column shows for each state the total number of physicians registered by all methods during 1925. Seven states registered over 300 each, these being New York, 1,078; California, 584; Florida, 438; Ohio, 383; Pennsylvania, 367; Illinois, 358 and Michigan, 335. The total registration by all methods was 7,194, an increase of 641 over 1924.

Medical Training of Applicants Licensed in 1925

Table H is of especial interest, since it shows for each state the numbers of candidates coming from medical schools rated in classes A, B and C, thereby indicating the character of the medical training of the candidates licensed during 1925. Of the 7,194 candidates registered, 5,404 were licensed by

Table G.—*Registration by State Boards for Five Years*

State	1921	1922	1923	1924	1925	Total
Alabama	51	43	53	50	47	244
Arizona	6	37	27	26	30	126
Arkansas	97	66	79	51	80	373
California	581	630	692	638	584	3,125
Colorado	123	119	102	86	108	538
Connecticut	164	150	101	107	116	638
Delaware	14	22	12	11	12	71
District of Columbia	57	69	79	90	119	414
Florida	50	56	72	157	438	773
Georgia	86	84	95	100	98	463
Idaho	33	22	12	16	15	98
Illinois	399	335	427	432	358	1,951
Indiana	102	69	142	157	161	631
Iowa	126	70	70	101	139	506
Kansas	99	86	102	90	93	470
Kentucky	94	69	67	88	94	412
Louisiana	85	64	76	81	81	387
Maine	41	34	32	68	51	226
Maryland	160	93	122	111	139	625
Massachusetts	225	244	221	266	153	1,109
	218	202	282	310	335	1,386
	215	200	147	180	205	947
	34	43	45	33	41	196
Missouri	165	130	216	191	165	867
Montana	19	11	20	26	24	100
Nebraska	111	62	118	99	134	524
Nevada	6	24	20	23	11	84
New Hampshire	18	12	10	22	20	82
New Jersey	164	137	208	124	74	707
New Mexico	38	41	31	16	21	147
New York	879	748	754	881	1,078	4,340
North Carolina	101	66	111	128	118	524
North Dakota	14	14	16	14	30	88
Ohio	326	261	307	388	383	1,665
Oklahoma	108	78	76	48	67	377
Oregon	31	47	44	57	93	272
Pennsylvania	334	313	256	343	367	1,613
Rhode Island	27	27	26	20	25	125
South Carolina	40	30	45	41	51	207
South Dakota	24	22	28	31	24	129
Tennessee	102	65	114	116	119	516
Texas	195	178	201	98	242	914
Utah	29	27	24	18	26	124
Vermont	34	21	30	36	59	180
Virginia	82	80	98	104	117	481
Washington	158	59	74	116	113	520
West Virginia	74	82	106	84	80	426
Wisconsin	119	110	104	189	165	687
Wyoming	18	17	13	19	12	79
U. S. Possessions	42	28	214	63	79	426
Totals	6,348	5,497	6,321	6,553	7,194	31,913

This table shows the totals registered in each state during the last five years. Marked decreases are noteworthy in Illinois, 74; New Jersey, 50; Missouri, 26 and Wisconsin, 24. Marked increases over 1924, however, are noted in Florida, 281; New York, 197 and Texas, 144. During the three years following 1920 the totals registered decreased from 6,557 to 6,321. In the three years since 1923 the totals have again increased to 7,194—the largest number registered in any year since 1910.

Table H.—*Qualifications of Physicians Licensed in 1925*

Marginal Number	STATE	By Examination: Medical Colleges in Class A	B	C	Misc.	Totals	By Reciprocity or Credentials: Medical Colleges in Class A	B	C	Misc.	Totals	Totals Registered from Medical Colleges in Class A	B	C	Misc.	Grand Totals	Marginal Number
1	Alabama	26	..	..	..	26	17	1	1	2	21	43	1	1	2	47	1
2	Arizona	3	..	2	..	5	15	2	1	7	25	18	2	3	7	30	2
3	Arkansas	22	2	20	4	48	20	6	1	5	32	42	8	21	9	80	3
4	California	257	4	2	30	293	176	29	10	76	291	433	33	12	106	584	4
5	Colorado	31	1	18	2	52	32	9	..	15	56	63	10	18	17	108	5
6	Connecticut	42	6	..	1	49	55	8	1	8	67	97	9	1	9	116	6
7	Delaware	3	..	..	1	4	5	2	..	1	8	8	2	..	2	12	7
8	District of Columbia	99	1	1	4	105	5	..	2	7	14	104	1	3	11	119	8
9	Florida	347	35	2	53	437	..	..	..	1	1	347	35	2	54	438	9
10	Georgia	85	..	..	1	86	11	..	1	..	12	96	..	1	1	98	10
11	Idaho	7	1	..	1	9	1	1	..	4	6	8	2	..	5	15	11
12	Illinois	224	22	19	31	296	41	10	4	7	62	265	32	23	38	358	12
13	Indiana	94	2	..	..	96	39	6	3	17	65	133	8	3	17	161	13
14	Iowa	84	..	..	5	89	39	3	3	5	50	123	3	3	10	139	14
15	Kansas	63	..	..	2	65	18	3	2	5	28	81	3	2	7	93	15
16	Kentucky	52	1	2	3	58	26	5	..	5	36	78	6	2	8	94	16
17	Louisiana	71	..	1	..	72	8	1	..	..	9	79	1	1	..	81	17
18	Maine	33	3	..	4	40	8	..	..	3	11	41	3	..	7	51	18
19	Maryland	107	1	1	6	115	13	3	1	7	24	120	4	2	13	139	19
20		107	3	31	5	146	7	..	..	..	7	114	3	31	5	153	20
21		252	6	..	10	268	49	5	1	12	67	301	11	1	22	335	21
22		134	..	..	1	135	60	4	..	6	70	194	4	..	7	205	22
23		25	1	2	..	28	7	4	..	2	13	32	5	2	2	41	23
24	Missouri	160	2	1	2	165	..	..	..	..	0	160	2	1	2	165	24
25	Montana	11	2	..	..	13	8	1	..	2	11	19	3	..	2	24	25
26	Nebraska	123	..	..	1	124	9	1	..	..	10	132	1	..	1	134	26
27	Nevada	1	..	..	1	2	7	..	1	1	9	8	..	1	2	11	27
28	New Hampshire	3	..	..	..	3	14	..	..	3	17	17	..	..	3	20	28
29	New Jersey	51	3	..	20	74	..	..	..	..	0	51	3	..	20	74	29
30	New Mexico	1	..	..	..	1	10	1	..	9	20	11	1	..	9	21	30
31	New York	724	68	1	140	933	112	6	..	27	145	836	74	1	167	1,078	31
32	North Carolina	80	..	..	..	80	30	3	..	5	38	110	3	..	5	118	32
33	North Dakota	17	1	..	..	18	11	..	..	1	12	28	1	..	1	30	33
34	Ohio	258	28	1	19	306	63	8	1	5	77	321	36	2	24	383	34
35	Oklahoma	36	..	..	2	38	20	3	1	5	29	56	3	1	7	67	35
36	Oregon	50	..	..	1	51	27	4	..	11	42	77	4	..	12	93	36
37	Pennsylvania	294	20	..	21	335	31	..	..	1	32	325	20	..	22	367	37
38	Rhode Island	20	..	..	5	25	..	..	..	..	0	20	..	..	5	25	38
39	South Carolina	38	..	..	..	38	7	3	1	2	13	45	3	1	2	51	39
40	South Dakota	11	1	..	2	14	9	..	..	1	10	20	1	..	3	24	40
41	Tennessee	116	..	2	1	119	..	..	..	..	0	116	..	2	1	119	41
42	Texas	98	..	5	7	110	65	16	18	33	132	163	16	23	40	242	42
43	Utah	13	..	..	..	13	10	1	..	2	13	23	1	..	2	26	43
44	Vermont	50	..	..	2	52	6	..	..	1	7	56	..	..	3	59	44
45	Virginia	86	..	1	..	87	25	1	1	3	30	111	1	2	3	117	45
46	Washington	22	2	..	3	27	64	8	3	11	86	86	10	3	14	113	46
47	West Virginia	52	2	..	3	57	19	1	..	3	23	71	3	..	6	80	47
48	Wisconsin	99	4	2	10	115	35	5	..	10	50	134	9	2	20	165	48
49		4	..	..	..	4	7	..	..	1	8	11	..	..	1	12	49
50		24	1	..	53	78	1	..	..	..	1	25	1	..	53	79	50
	Totals	4,610	223	114	457	5,404	1,242	159	57	332	1,790	5,852	382	171	789	7,194	

In 1925, 23 candidates were licensed by the Arkansas Eclectic Board, including 20 graduates of a class C school and one nongraduate who is rated as of class C.

Of the 31 graduates of class C colleges licensed in Massachusetts, 13 were graduates of osteopathic colleges, which are rated as of class C. In Colorado, of the 18 class C applicants registered, 4 were graduates of osteopathic colleges, and one was a nongraduate.

In Connecticut, in 1925, no candidates were reported as licensed by the Eclectic Board and only one class C candidate (a nongraduate) was licensed in the state by reciprocity.

Illinois harbors the Chicago Medical School, a class C medical college, not now recognized in 47 other states. Massachusetts has two class C colleges, the College of Physicians and Surgeons and the Middlesex College of Medicine and Surgery, but does not have the authority to refuse recognition to low grade institutions. This accounts for the large number of class C graduates licensed in that state. Missouri has three class C colleges, the Kansas City College of Medicine and Surgery, the Kansas City University of Physicians and Surgeons and the St. Louis College of Physicians and Surgeons. The Missouri board refused recognition to these colleges until forced to do so by an amendment to the medical practice law in 1921—an amendment that was repealed in 1923. Missouri registered only one class C graduate in 1925, as compared with 38 in 1923.

Texas reports that class C medical schools are not recognized, but accepted 20 osteopaths who come from schools of equally low or lower type.

Eleven states accepted class C graduates through reciprocity, while they licensed none by examination. Indiana, Iowa and Washington so registered 3 each. One or two each were licensed by reciprocity in eight other states. Altogether, there were 18 class C graduates licensed by reciprocity in states which registered none by examination. On the whole, in 1925, 114 class C graduates were licensed by examination an 57 through reciprocity, a total of 171, 42 more than in 1924.

examination and 1,790 by reciprocity or on presentation of acceptable credentials Those who graduated prior to 1907, when the first classification of medical colleges was completed by the Council on Medical Education, are included among graduates of "Miscellaneous Colleges." Among the graduates of class C schools are included twenty-three osteopaths who were licensed as physicians in Colorado, Massachusetts, Texas and Wisconsin

As will be noted, the largest number of class C graduates was licensed in Massachusetts with 31, followed by Illinois and Texas with 23 each, Arkansas with 21, Colorado with 18, California with 12, and Florida, Indiana, Iowa and Washington with 3 each

New York registered 74 class B graduates—the largest number—followed by Ohio with 36, Florida, 35; California, 33; Illinois, 32, and Pennsylvania, 20 In 1925, only class A graduates were registered by either examination or reciprocity in New Hampshire, Rhode Island, Vermont and Wyoming

Of the 7,194 physicians registered by all methods in 1925, 5,852, or 81 3 per cent, graduated from class A medical colleges, 382, or 5 3 per cent, from class B colleges, 171, or 2.4 per cent, from class C colleges, and 789, or 11.1 per cent, graduated prior to 1907, when the first classification of medical colleges was prepared, or came from foreign medical colleges By comparing these figures with the results for the previous seven years as shown in table 4, it is noteworthy that the *percentages* from class B and class C colleges are steadily decreasing, and the percentage of graduates of class A colleges increasing

Table 4—*Source of Physicians Licensed in Nine Years*

Year	From Medical Colleges in						Miscellaneous and Foreign		Total
	Class A		Class B		Class C				
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	
1917	3,369	62 1	968	18 2	297	4 3	769	14 4	5,423
1918	2,456	58 7	682	16 3	342	8 2	705	16 8	4,185
1919	4,368	66 4	872	13 2	278	4 2	1,066	16 2	6,584
1920	4,597	70 2	631	9 6	275	4 2	1,054	16 0	6,557
1921	4,445	70 0	585	9 2	394	6 2	924	14 6	6,348
1922	3,999	72 8	444	8 1	316	5 7	738	13 4	5,497
1923	4,755	75 2	380	6 0	299	4 8	887	14 1	6,321
1924	5,106	79 3	401	6 2	120	1 9	824	12.6	6,553
1925	5,852	81 3	382	5 3	171	2 4	789	11 0	7,101
Totals	39,037	71 4	5 368	9 8	2,501	4 6	7,756	14 2	54,662

Table I.—*Qualifications of Physicians Licensed by State Medical Boards in Six Years*

Mar No	State	Graduates of Class A Medical Schools							Graduates of Class B Medical Schools							Graduates of Class C Medical Schools							Grads of Misc Colleges 6 Yrs	Total Registrations 6 Yrs	Mar No.
		1920	1921	1922	1923	1924	1925	Total	1920	1921	1922	1923	1924	1925	Total	1920	1921	1922	1923	1924	1925	Total			
1	Alabama	39	37	28	46	40	43	233	10	7	8	5	4	1	35	3	1	0	0	0	1	5	26	299	1
2	Arizona	21	4	16	15	17	18	91	3	0	2	1	5	2	13	0	0	1	1	0	3	5	57	166	2
3	Arkansas	36	47	24	24	27	42	200	16	9	15	8	9	8	65	26	21	18	36	1	21	123	82	470	3
4	California	265	235	349	459	461	433	2,202	69	85	74	56	46	33	363	61	47	63	17	8	12	208	933	3,706	4
5	Colorado	57	54	62	59	49	63	344	7	9	8	6	7	10	47	33	25	14	21	17	18	128	177	696	5
6	Connecticut	93	69	64	62	94	97	479	4	7	6	2	3	9	31	1	66	74	27	0	1	169	61	740	6
7	Delaware	3	10	16	9	6	8	52	3	1	2	2	2	2	12	1	2	3	0	0	0	6	12	82	7
8	Dist Columbia	66	45	59	66	76	104	416	4	0	0	2	3	1	10	1	1	4	5	3	3	17	45	488	8
9	Florida	33	28	42	60	117	347	627	5	5	3	4	7	35	59	3	1	1	1	4	2	12	156	854	9
10	Georgia	76	72	75	87	92	96	498	25	6	3	4	3	0	41	1	2	0	2	2	1	8	42	589	10
11	Idaho	31	12	15	7	12	8	85	2	5	3	2	4	2	18	0	0	1	0	0	0	1	49	153	11
12	Illinois	370	320	288	341	309	265	1,893	54	21	23	27	31	32	188	33	45	10	25	18	23	154	185	2,420	12
13	Indiana	103	81	53	111	116	133	597	27	10	4	10	20	8	79	2	0	0	1	1	3	7	92	775	13
14	Iowa	103	97	64	64	84	123	535	15	15	2	1	6	3	42	2	6	0	0	3	3	14	55	646	14
15	Kansas	62	71	56	55	71	81	396	10	7	10	11	8	3	49	2	4	4	21	2	2	35	81	561	15
16	Kentucky	35	63	41	54	71	78	342	8	10	11	6	8	6	49	3	5	4	3	2	2	19	51	461	16
17	Louisiana	82	74	54	68	78	79	435	6	3	3	3	3	1	19	0	1	2	0	0	1	4	25	483	17
18	Maine	3	32	29	29	55	41	209	0	2	0	2	3	3	10	0	0	1	0	0	0	1	42	262	18
19	Maryland	130	140	81	109	92	120	672	3	10	2	5	4	4	28	3	4	1	0	2	2	12	80	792	19
20	Massachusetts	184	153	178	138	190	114	957	9	4	2	3	5	3	26	19	42	51	59	46	31	248	96	1,327	20
21	Michigan	215	194	161	239	283	301	1,393	24	26	7	10	13	11	91	1	2	2	1	1	1	8	170	1,662	21
22	Minnesota	146	190	178	138	157	194	1,003	14	7	6	2	3	4	36	1	0	0	0	0	0	1	81	1,121	22
23	Mississippi	34	27	25	35	28	32	181	4	4	8	4	3	5	28	1	0	3	0	0	2	6	25	240	23
24	Missouri	127	136	109	148	182	160	862	32	14	4	16	0	2	68	5	5	7	38	1	1	57	66	1,053	24
25	Montana	18	14	10	15	22	19	98	2	0	0	3	1	3	9	1	0	0	0	0	0	1	25	133	25
26	Nebraska	44	82	52	108	92	132	510	17	12	5	3	0	1	38	2	5	0	0	0	0	7	52	607	26
27	Nevada	10	1	5	5	8	8	37	2	0	3	3	1	0	9	6	0	5	6	4	1	22	51	119	27
28	New Hampshire	17	10	8	9	16	17	77	0	1	1	0	2	0	4	0	1	1	0	0	0	2	22	105	28
29	New Jersey	111	113	99	152	81	51	607	11	16	5	9	7	3	50	7	1	5	1	1	0	15	201	873	29
30	New Mexico	14	20	15	14	7	11	81	7	3	5	3	3	1	22	0	0	0	1	0	0	1	95	199	30
31	New York	675	758	630	648	703	836	4 250	55	73	53	39	62	74	356	0	1	5	1	0	1	8	467	5,081	31
32	North Carolina	91	76	52	86	109	110	524	12	5	4	13	5	3	42	2	1	0	2	1	0	6	70	612	32
33	North Dakota	23	10	10	13	8	28	92	3	0	0	3	2	1	9	0	0	0	0	0	0	0	22	123	33
34	Ohio	228	189	188	250	302	321	1,478	44	84	46	25	33	36	268	0	3	1	0	1	2	7	212	1,965	34
35	Oklahoma	35	50	32	47	33	56	253	13	10	15	11	5	3	57	5	26	6	4	2	1	44	112	466	35
36	Oregon	41	19	28	36	44	77	245	6	1	1	5	6	4	23	3	2	1	1	1	0	8	72	348	36
37	Pennsylvania	289	289	261	229	304	325	1,697	16	16	22	17	29	20	120	1	14	5	0	0	0	20	90	1,927	37
38	Rhode Island	20	15	22	25	17	20	119	1	1	0	0	0	0	2	1	1	0	0	0	0	2	27	150	38
39	South Carolina	36	31	24	39	39	45	214	1	2	2	4	2	3	14	1	3	0	1	0	1	6	14	248	39
40	South Dakota	33	17	15	23	23	20	131	3	2	2	0	0	1	8	2	1	0	0	2	0	5	31	175	40
41	Tennessee	54	69	35	110	113	116	497	24	30	26	1	2	0	83	2	0	2	0	1	2	7	61	648	41
42	Texas	159	116	108	136	94	163	776	16	18	22	19	0	16	91	28	34	8	18	2	23	113	204	1,184	42
43	Utah	24	21	24	23	17	23	132	0	1	1	0	0	1	3	2	1	0	0	0	0	6	20	161	43
44	Vermont	20	29	21	26	34	56	186	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	197	44
45	Virginia	70	75	70	86	99	111	511	7	2	4	2	2	1	18	1	2	2	2	1	2	10	33	572	45
46	Washington	60	73	38	45	65	86	367	8	19	7	11	13	10	68	3	2	0	0	1	3	9	199	643	46
47	West Virginia	71	48	66	91	71	71	418	10	8	5	4	1	3	31	3	1	4	0	0	0	8	66	523	47
48	Wisconsin	78	87	88	87	140	134	614	13	12	5	9	28	9	76	1	9	1	3	0	2	16	100	806	48
49	Wyoming	17	10	5	8	14	11	65	6	1	3	3	0	0	13	1	1	5	0	1	0	8	31	117	49
50	U S Territories and Possessions	25	31	23	22	34	25	160	0	2	1	1	0	1	5	1	2	0	0	0	0	3	103	271	50
	Totals	4,597	4,445	3,996	4 735	5,196	5,852	28,841	631	585	444	380	404	382	2,826	275	391	315	298	129	170	1,582	5,083	38 332	

Of the 125 graduates of low grade colleges licensed in Arkansas during the last six years, 123 were licensed by the Eclectic Board of Medical Examiners and 2 by the Regular Board

During the six years, 208 graduates of inferior colleges were licensed in California, including 98 osteopaths who were licensed as physicians None have been examined since 1922, however, when a separate osteopathic board was created

Of the 128 class C graduates licensed in Colorado, 73 were osteopaths who are given the same privileges as physicians

During the three years 1921 to 1923, inclusive, the Connecticut Eclectic Board certified for licensure 167 graduates of class C colleges, including graduates of regular, homeopathic and nondescript colleges as well as eclectic None were licensed, however, in the last two years, although in 1925, one candidate was passed by the Eclectic Board but was refused a license by the commissioner of health

Illinois, Massachusetts and Missouri are the homes of class C medical colleges, which accounts for the larger numbers of class C graduates licensed in those states

Note that, in Missouri, 38 class C graduates were licensed in 1923, as a result of the change in the practice law removing the word "reputable" as referring to medical colleges The amendment, however, was repealed in 1923, so that only one class C candidate, an old practitioner, was registered in 1925

Of the 113 graduates of low grade institutions licensed in Texas during the six years, only 16 were by examination, while 97 were by reciprocity. Of those licensed, 67 were osteopaths who are given the same privileges as physicians

Table J.—*Physicians Registered Through Reciprocity by State Examining Boards During 1924*

Number.....	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
	Total Regis. by Ex. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	N. etc	d. Ex.	ories	[illegible]
Alabama....	21	..	..	1	1	..	..	..	1	..	9	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	1	..	..	..	..
Arizona......	25	..	..	..	2	1	..	..	..	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	1	..	1	..	..	1	..	1	..	..	..	1	..	1	..	..	..	4	2	..	1	..	..	..	1	..	..	..	..	5
Arkansas....	32	1	..	..	1	..	..	..	..	..	..	..	2	..	..	1	1	4	..	1	..	..	..	6	.	..	..	..	..	..	..	..	..	..	1	7	..	..	..	..	..	6	..	..	..	..	..	1	..	..	..	..	..	..
California...	291	2	1	4	..	4	1	..	3	..	..	3	30	6	15	10	3	5	3	7	3	12	11	..	8	9	18	3	.	..	.	24	1	2	13	4	11	9	1	..	4	5	8	4	3	1	1	4	3	3	19	..	6	..
Colorado....	46	1	..	1	1	..	1	..	1	..	2	..	10	2	3	1	1	1	..	3	1	..	1	..	3	..	1	..	.	1	..	2	.	.	1	2	..	2	..	..	..	2	1	1	..	1	.	..	1	..	..	4	..	..
Connecticut.	67	..	1	..	..	..	..	..	..	..	2	..	3	1	..	..	..	..	2	7	13	4	..	..	1	..	..	..	1	.	..	15	..	.	..	..	..	3	3	..	..	..	..	..	1	1	..	1	..	..	..	8	..	..
Delaware....	[illegible]												1						1	1					..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2	..	..	..	..	..	..
Dist. of Col..																									..	..	1	..	..	..	..	1	3	..	1	1	..	..	..	..	..	1	..	..	..	2	..	1	..	..	..	..	..	..
Florida......																									..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Georgia......																									..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	5	..	..	..	..	..	..	..	..	..	..	..	..
Idaho........	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..
Illinois.......	62	2	..	4	..	1	..	..	..	..	..	..	...	8	4	1	3	..	1	2	..	2	4	1	.												..	5	..	..	..	3	4	..	..	..	..	1	5	..	4	..	..	..
Indiana......	65	1	..	..	..	..	..	..	1	..	..	..	18	8	2	..	6	2	..	..	..	1	..	..	3												.	2	..	..	1	2	..	..	..	1	..	..	1	1	..	..	..	..
Iowa.........	50	..	..	..	..	..	..	..	..	..	..	..	10	..	..	..	1	1	..	..	..	2	4	..	9	..	16	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..	..	1	1	..	..	..	..	2	..	..
Kansas.......	28	1	..	3	..	1	..	..	..	..	..	..	4	..											.	1	8	..	..	..	..	..	..	..	1	3	..	1	..	..	1	..	1	..	..	..	1	1	..	..	..	..	..	..
Kentucky....	26	3	..	1	..	..	..	..	..	..	..	..	3	2											..	..	..	..	..	..	..	..	..	..	5	1	..	2	..	..	..	5	2	..	..	..	1	5	..	..	..	2	..	1
Louisiana...	9	1	..	..	..	..	..	..	..	..	..	..	1	..											..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..	..	1	..	..	..	..	..	..	..	..
Maine........	11	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1	..	..	1	..	1	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..
Maryland....	24	..	..	..	1	..	..	..	5	..	..	..	1	1	1	..	..	..	1	..	..	1	..	1	.	..	1	..	..	..	..	..	..	..	1	..	..	1	..	3	..	..	..	..	..	2	..	2	..	..	..	2	..	..
Massachu'ts.	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7	..	..
Michigan....	67	..	..	..	2	1	..	..	1	..	..	..	13	..	6	1	1	..	1	4	4	..	2	..	8	..	..	..	..	..	..	3	..	..	9	1	..	1	..	1	..	2	2	..	..	..	2	1	1	..	..	..	..	..
Minnesota...	70	..	..	..	2	..	1	..	..	..	1	..	11	..	7	..	..	..	..	1	..	5	..	..	.	..	3	..	..	1	..	..	3	5	1	..	..	6	..	..	1	1	..	..	..	3	..	..	10	..	..	8	..	..
Mississippi...	13	1	..	2	..	..	..	..	..	..	1	..	1	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	1	..	..	..	..	..	..	..	..
Missouri.....																									..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Montana....	1																								..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	..	..	3	1	..	..	..	..	..	..
Nebraska....	1																								1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Nevada......																									1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..
N. Hampsh'e	1																								..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..
New Jersey..																									..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
New Mexico..	2																								1	..	1	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	2	..	..	..	1	..	..	..	..	..	..	..
New York....	13																								1	1	1	..	..	11	..	..	1	..	14	..	2	13	..	..	..	1	4	..	1	10	1	..	4	..	..	13	8	4
N. Carolina..	3																								..	..	..	..	..	..	..	3	..	..	1	..	..	2	..	8	..	1	..	..	..	4	..	1	..	..	1	2	..	..
N. Dakota...	12	..	..	..	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	6	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..
Ohio.........	[illegible]				[illegible]	[illegible]							9	4	3	2	6	2	..	2	..	9	4	1	.	..	4	..	..	2	..	5	..	..	..	1	..	10	..	..	..	3	3	..	..	..	..	2	1	..	..	..	..	..
Oklahoma...													..	..	..	5	..	2	..	..	..	..	..	3	1	..	..	..	..	1	..	..	..	1	..	..	..	..	..	..	..	2	7	..	..	..	..	..	..	..	..	..	..	..
Oregon......														1	4	..	..	..	..	..	..	..	1	1	2	..	4	..	..	..	..	2	.	1	1	..	..	1	..	1	..	..	..	..	..	..	9	..	..	..	..	..	..	..
Penns'vania.														2	..	..	..	..	1	..	1	1	..	..	1	..	..	..	..	1	..	1	1	..	1	..	..	..	1	..	..	..	..	..	..	..	1	..	1	..	1	17	..	..
Rhode Isl....	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
S. Carolina..	13	1	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
S. Dakota...	10	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	6	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..
Tennessee ...	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Texas........	132	3	1	10	2	..	..	..	..	..	2	..	9	2	3	4	6	21	..	1	..	3	1	1												12	..																	
Utah.........	13	..	..	..	..	..	..	..	1	..	..	..	1	..	..	2	..	..	..	..	..	..	1	..																														
Vermont.....	7	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	1	.	..	1	..	..																				..
Virginia.....	[illegible]												1	..	..	..	1	..	..	4	..	..	..	..	..	..	..	..	..	1	..	1	2	.																				..
Washington.	[illegible]				4							4	14	..	8	3	1	..	..	..	..	1	8	1	3	7	6	..	..	..	..	..	..	1																				..
W. Virginia..	[illegible]												..	..	..	..	1	..	..	2	..	..	..	1	..	..	..	..	..	1	..	2	..	..																				1
Wisconsin...	[illegible]												17	2	5	..	..	1	..	2	..	3	4	..	..	..	1	..	..	..	..	1	..	..	1	..	..	1	..	..	..	3	2	1	..	1	..	..	..	..	..	..	..	..
Wyoming....	[illegible]												1	1	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..
U. S. Terr. and Poss..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Totals.......	1784	18	4	31	31	17	6	1	25	2	34	15	181	46	73	33	34	48	19	49	43	57	58	19	66	20	50	3	4	20	2	72	14	10	72	38	24	70	5	16	11	84	42	11	14	39	29	31	31	7	33	67	14	11
Number......	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

This table shows the number of physicians registered in each state through endorsement of other state licenses during 1925. Read from left to right, it shows the total number of physicians registered in the state named and the number of such candidates coming from each of the states named at the top of the various columns. Read from above downward, the figures show the number of physicians who left the state named at the head of the column and went to each of the states named at the left in the corresponding lines, and at the bottom is given the total number of candidates leaving the state to go elsewhere. This bottom line shows also the states in which physicians who registered through reciprocity obtained their original licenses. The total number licensed by reciprocity was 1,784, or 3 less than in 1924.

Training of Physicians Registered in Six Years

Table I is of especial interest and shows the character of the training of physicians registered during the last six years. It is noteworthy that of the 38,332 physicians registered in six years, 28,841, or 75.2 per cent, were graduates of class A medical schools; 2,826, or 7.4 per cent, were graduates of class B schools, and 1,582, or 4.1 per cent, were graduates of class C schools. Graduates of foreign medical schools and those who graduated prior to 1907 from medical schools which, since that year, have not always been rated in class A, have been grouped under "Miscellaneous Graduates"; and, during the six years, 5,083 of these graduates were registered.

The largest number of candidates registered who graduated from class C colleges was 248 in Massachusetts, the next highest being 208 in California, 169 in Connecticut,[3] 154 in Illinois, 128 in Colorado, 123 in Arkansas, and 113 in Texas.

Note the number of class C graduates licensed in each of several states during the six years. In Arkansas, the number licensed ranges from eighteen to thirty-six each year. The number drops abruptly to one in 1924 (an undergraduate). This slump was undoubtedly due to the forced inactivity of the Kansas City College of Medicine and Surgery. In spite of its exposure as a diploma mill in 1923, this institution continues to issue degrees. Although Arkansas licensed twenty-one class C graduates in 1925, including seventeen from the Kansas City College of Medicine and Surgery, only four of these obtained their degrees in 1925.

In Connecticut, only a few such candidates were licensed each year until in 1921, 1922 and 1923 the numbers bounded up to 66, 74 and 27, respectively. The eclectic board had ceased to limit its acceptance of graduates of eclectic colleges, but had accepted all who applied, including graduates of homeopathic and regular schools. Note, however, that in 1924 and 1925 no class C graduates were licensed—a result of the diploma mill inquiry. In Illinois the numbers are larger or smaller as the board in that state fluctuates in its recognition of the Chicago Medical School, a typical class C institution. In Massachusetts there are two class C colleges—the board not having the authority to decide whether or not a medical school is "reputable." In Missouri, which harbors three of the class C schools, the board persistently refused recognition to those schools until late in 1922 the practice law was amended, forcing the board to examine class C graduates—hence the larger number in 1923. In

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[3] In Connecticut, legal proceedings are being conducted to revoke *many of these licenses.*

1925, after the board's power was restored and the low-grade medical schools were again refused recognition, only one such candidate was registered.

Registration by Reciprocity

Table J shows the numbers of physicians registered in 1925 without examination on presentation of satisfactory credentials, which included a license issued by some other state board or by the National Board of Medical Examiners. Some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, as examples—accept a physician's credentials if satisfactory, whether or not the state board issuing the original license returns the favor. Altogether, 1,784 physicians were licensed in 1925 on the basis of "reciprocity"—without being compelled to undergo a second trying examination.

Table K.—*Reciprocal Registration in Five Years (Showing What States Issued Original Licenses)*

State	Physicians Going from States Named During					Total
	1921	1922	1923	1924	1925	
Alabama	31	19	25	17	18	110
Arizona	8	12	9	2	4	35
Arkansas	33	43	50	15	31	172
California	23	28	30	16	31	128
Colorado	18	15	21	16	17	87
Connecticut	10	11	12	2	6	41
Delaware	10	12	5	1	1	29
District of Columbia	20	27	25	17	25	114
Florida	4	1	4	8	2	19
Georgia	40	34	58	55	34	221
Idaho	14	10	20	18	15	77
Illinois	304	246	276	248	181	1,255
Indiana	50	44	49	42	46	231
Iowa	81	65	82	73	73	374
Kansas	54	41	52	30	33	210
Kentucky	56	40	51	46	34	227
Louisiana	40	33	50	27	48	198
Maine	26	14	14	11	19	84
Maryland	63	64	60	55	49	291
Massachusetts	31	38	37	31	43	180
Michigan	70	70	50	64	57	311
Minnesota	47	40	57	59	58	261
Mississippi	24	24	27	26	19	120
Missouri	158	126	120	63	66	533
Montana	41	23	29	28	20	141
Nebraska	48	57	75	80	80	340
Nevada	5	5	5	8	3	26
New Hampshire	10	7	5	5	4	31
New Jersey	15	25	9	16	20	85
New Mexico	3	3	6	4	2	18
New York	135	127	144	92	72	570
North Carolina	21	8	14	10	14	67
North Dakota	15	18	17	18	10	78
Ohio	58	70	62	73	72	335
Oklahoma	27	27	44	30	38	166
Oregon	6	26	20	18	24	94
Pennsylvania	92	90	118	82	70	452
Rhode Island	3	6	4	1	5	19
South Carolina	10	24	21	17	16	88
South Dakota	11	9	12	16	11	59
Tennessee	91	75	68	70	84	388
Texas	43	34	54	35	42	208
Utah	21	17	12	16	11	77
Vermont	11	13	24	16	14	78
Virginia	52	46	43	44	39	224
Washington	27	37	34	19	29	146
West Virginia	18	24	18	24	31	115
Wisconsin	30	27	31	27	31	146
Wyoming	8	4	10	3	7	32
Army, Navy, P. H. Service	61	52	45	34	33	225
National Board of Medical Examiners	23	15	22	49	67	176
U. S. Territories and Possessions	2	8	3	5	14	32
Foreign and Misc.	7	10	11	5	11	44
Totals	2109	1914	2144	1787	1784	9768

This table shows that 9,768 physicians were registered through reciprocity during the last five years, an average of 1,954 each year. After 1920 there was a reduction each year, including 1922. In 1923 there was an increase of 314, but in 1925 a reduction of 674. Of the 9,768 candidates registered during the five years, 1,255 obtained their original licenses in Illinois, the next largest number being 570 in New York.

Table K shows what state boards granted the original licenses of those registered elsewhere under the reciprocity provision during the last five years. Of the 9,768 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,255 who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois, only 570 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-eight states, while New York has relations with only eight.

Unlicensed Graduates

Table L shows the number of physicians in each graduating class since 1910 who, evidently, have not yet received licenses from some state licensing board. Besides the total number of graduates each year, the table shows for 1925 the numbers remaining unlicensed in each class since 1910. The number of graduates of 1925 who are unlicensed are mostly interns, while those in previous classes include teachers, laboratory workers, including bacteriologists and pathologists, and others indirectly connected with the medical profession, but not engaged in diagnostic work. Some of these unlicensed physicians reside abroad and may have received the right to practice, but have never secured licenses in the United States. The fact that many internships extend over eighteen months or two years doubtless accounts for the large number of graduates of 1924 who are still unlicensed. The number of unlicensed graduates of Canadian schools is also shown.

Of the 2,777 graduates in the United States who are still unlicensed (fourth and fifth column), 260 have each failed in from one to twelve separate examinations for licensure, making a total of 574 failures. It is an interesting fact, although not shown in the table, that approximately half of the individuals who failed are graduates of class C medical schools.

Improved Standards of Licensure

Table M shows the states that have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine, and also the states that require a year's internship in a hospital. The first, third and fifth columns show, respectively, when the requirements affected students matriculating in medical colleges, and the second, fourth and sixth columns give the years in and after which all applicants for licenses are affected by the requirement. This table shows the rapidity with which higher requirements of preliminary education were adopted by state boards since 1908. Prior to that year, no state was requiring as a standard of preliminary education more than a high school education. There are now

Table L.—*Number of Medical Graduates in Each of the Years Given Who Have Not Yet Obtained Licenses to Practice*

Class of	United States Medical Schools				Canadian Medical Schools	
	Total Graduates	Still Unlicensed in 1925	Failed at Exam.		Total Graduates	Still Unlicensed in 1925*
			Persons Failed	Times Failed		
1910	4,440	74	5	8	308	11
1911	4,273	82	7	15	312	14
1912	4,483	69	8	14	263	15
1913	3,981	65	10	13	305	14
1914	3,594	85	5	46	321	19
1915	3,536	69	14	37	318	19
1916	3,518	100	11	44	206	21
1917	3,379	127	10	21	315	15
1918	2,670	99	18	48	270	17
1919	2,656	108	10	24	296	15
1920	3,047	100	21	49	251	17
1921	3,192	91	20	32	406	18
1922	2,529	161	40	72	434	57
1923	3,120	161	34	87	492	54
1924	3,562	375	24	36	615	155
1925	3,974	1,011	23	28	473	171
Totals	55,954	2,777	260	574	5,645	632

* No information regarding failures of graduates before Canadian Boards.

forty-three states that have adopted the higher standard and, of these, thirty-nine require two years of college work. It is understood that in every instance the college work must have included courses in physics, chemistry and biology. Although the term "two years of college work" is mentioned, it is the content of those years that is asked for. That specification is used in the absence of a more fitting term describing the desired qualifications. As shown in table M (and the footnotes), in the District of Columbia, Massachusetts and Wyoming no standards of preliminary education have been legally authorized or adopted.

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There are now forty-two states (counting Alaska Ter.) which have adopted requirements of preliminary education in addition to a standard four-year high school education. Of this number thirty-nine now require the two year standard. Twelve states have adopted also the requirement of a hospital internship as an essential for the license. These states, and the time the higher requirements became or become effective are as follows:

State Examining Board of	One Year of College Work		Two Years of College Work		A Hospital Internship	
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Alabama	....	....	1915-16	1919	....	....
Alaska	1914-15	1918	1918-19	1922	1912-13	1917
Arizona	1914-15	1918	1918-19	1922	....	....
Arkansas [1]	1915-16	1919	1918-19	1922	....	....
California	1915-16	1919	....	....	....	....
Colorado	1908-09	1912	1910-11	1914	....	....
Connecticut [1]	1911-12	1915	....	....	....	....
Delaware*	....	....	....	....	1919-20	1924
Dist. of Columbia†	....	....	....	....	....	....
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Georgia	....	....	1918-19	1922	....	....
Idaho	....	....	1915-16	1919	....	....
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Iowa	....	....	1911-12	1915	1918-19	1923
Kansas	1910-11	1914	1918-19	1922	....	....
Kentucky	1914-15	1918	1918-19	1922	....	....
Louisiana	1915-16	1919	1918-19	1922	....	....
Maine	1915-16	1919	1916-17	1920	....	....
Maryland	1914-15	1918	1918-19	1922	....	....
Massachusetts†	....	....	....	....	....	....
Michigan	1914-15	1918	1918-19	1922	1917-18	1922
Minnesota	....	....	1908-09	1912	....	....
Mississippi	1915-16	1919	1919-20	1923	....	....
Missouri*	....	....	....	....	....	....
Montana	1914-15	1918	1918-19	1922	....	....
Nebraska*	....	....	....	....	....	....
Nevada*	....	....	....	....	....	....
New Hampshire	1914-15	1918	1915-16	1919	....	....
New Jersey	1915-16	1919	1917-18	1921	1911-12	1916
New Mexico	1914-15	1918	1918-19	1922	....	....
New York	1917-18	1921	1918-19	1922	....	....
North Carolina	1914-15	1918	1918-19	1922	....	....
North Dakota	....	....	1908-09	1912	1913-14	1918
Ohio	....	....	....	....	....	....
Oklahoma	1914-15	1918	1917-18	1921	....	....
Oregon	....	....	1920-21	1924	....	....
Pennsylvania	1914-15	1918	....	....	1909-10	1914
Rhode Island	1914-15	1918	1918-19	1922	1912-13	1917
South Carolina	....	....	1918-19	1922	....	....
South Dakota	1908-09	1912	1911-12	1915	1920-21	1925
Tennessee	1916-17	1920	1918-19	1922	....	....
Texas	1914-15	1918	1922-23	1926	....	....
Utah	1913-14	1917	1922-23	1926	1921-22	1926
Vermont	1913-14	1917	1918-19	1922	....	....
Virginia	1914-15	1918	1917-18	1921	....	....
Washington	1914-15	1918	1918-19	1922	1914-15	1919
West Virginia	1917-18	1921	1920-21	1924	....	....
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Wyoming†	....	....	....	....	....	....

* Require a four-year high school education or its equivalent.
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In table N, the advances in standards of licensure are shown for all states since 1904. The most marked increase is in regard to the requirement of college work in forty-three states—referred to also in table M. An equally great increase is shown in the number of states—now forty-seven—which are refusing to recognize low-grade medical colleges. One other state, Arkansas, could be added to the two lists referred to, were it not for the eclectic board, which is still "recognizing" the inferior schools.

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Requirement or Provision	States Having Provision for			States Still Having No Provision for
	1904	1925	Increase	
Preliminary Education—				
Any requirement	20	46	26	4[1]
A standard four-year high school education or higher	10	46	36	4[1]
One year or more of college work	0	43	43	7[2]
Two years of college work as a minimum	0	39	39	11[2]
That all applicants be graduates of a medical college	36	49	13	1[3]
That all applicants undergo an examination for license	45	50	5	0
Hospital intern year required	0	12[2]	12	38
Full authority by board to refuse recognition to low-grade colleges	14	48	34	2[4]
Boards refusing to recognize low-grade colleges	5	46[5]	41	4[1]
Reciprocal relations with other states	27	45	18	5[6]
Single boards of medical examiners	36	45	9	5[7]

1. District of Columbia, Massachusetts, Wyoming and (because of its eclectic board) Arkansas.
2. See Table M and footnotes.
3. Colorado.
4. District of Columbia and Massachusetts.
5. See Table D. In two states, Arkansas and Connecticut, each of which has three separate boards, only the regular (non-sectarian) boards have refused recognition to low standard medical colleges and have enforced higher standards of preliminary education.
6. Alaska, Connecticut, Florida, Massachusetts, Rhode Island. To this list should be added the outlying territories of Canal Zone and the Philippine Islands, which have no provision for reciprocity. Porto Rico has recently established reciprocal relations with New York.
7. Multiple boards still remain in Arkansas, Connecticut, District of Columbia, Louisiana and Maryland.

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1925, after the board's power was restored and the low-grade medical schools were again refused recognition, only one such candidate was registered.

REGISTRATION BY RECIPROCITY

Table J shows the numbers of physicians registered in 1925 without examination on presentation of satisfactory credentials, which included a license issued by some other state board or by the National Board of Medical Examiners. Some state boards—Arizona, California, Colorado, Delaware, Maryland, New Hampshire, New Jersey and North Carolina, as examples—accept a physician's credentials if satisfactory, whether or not the state board issuing the original license returns the favor. Altogether, 1,784 physicians were licensed in 1925 on the basis of "reciprocity"—without being compelled to undergo a second trying examination.

TABLE K.—*Reciprocal Registration in Five Years (Showing What States Issued Original Licenses)*

State	Physicians Going from States Named During					Total
	1921	1922	1923	1924	1925	
Alabama	31	19	25	17	18	110
Arizona	8	12	9	2	4	35
Arkansas	33	43	50	15	31	172
California	23	28	30	16	31	128
Colorado	18	15	21	16	17	87
Connecticut	10	11	12	2	6	41
Delaware	10	12	5	1	1	29
District of Columbia	20	27	25	17	25	114
Florida	4	1	4	8	2	19
Georgia	40	34	58	55	34	221
Idaho	14	10	20	18	15	77
Illinois	304	246	276	248	181	1,255
Indiana	50	44	49	42	46	231
Iowa	81	65	82	73	73	374
Kansas	54	41	52	30	33	210
Kentucky	56	40	51	46	34	227
Louisiana	40	33	50	27	48	198
Maine	26	14	14	11	19	84
Maryland	63	64	60	55	49	291
Massachusetts	31	38	37	31	43	180
Michigan	70	70	50	64	57	311
Minnesota	47	40	57	59	58	261
Mississippi	24	24	27	26	19	120
Missouri	158	126	120	63	66	533
Montana	41	23	29	28	20	141
Nebraska	48	57	75	80	80	340
Nevada	5	5	5	8	3	26
New Hampshire	10	7	5	5	4	31
New Jersey	15	25	9	16	20	85
New Mexico	3	3	6	4	2	18
New York	135	127	144	92	72	570
North Carolina	21	8	14	10	14	67
North Dakota	15	18	17	18	10	78
Ohio	58	70	62	73	72	335
Oklahoma	27	27	44	30	38	166
Oregon	6	26	20	18	24	94
Pennsylvania	92	90	118	82	70	452
Rhode Island	3	6	4	1	5	19
South Carolina	10	24	21	17	16	88
South Dakota	11	9	12	16	11	59
Tennessee	91	75	68	70	84	388
Texas	43	34	54	35	42	208
Utah	21	17	12	16	11	77
Vermont	11	13	24	16	14	78
Virginia	52	46	43	44	39	224
Washington	27	37	34	19	29	146
West Virginia	18	24	18	24	31	115
	30	27	31	27	31	146
	8	4	10	3	7	32
vice	61	52	45	34	33	225
National Board of Medical Examiners	23	15	22	49	67	176
U. S. Territories and Possessions	2	8	3	5	14	32
Foreign and Misc.	7	10	11	5	11	44
Totals	2109	1914	2144	1787	1784	9768

This table shows that 9,768 physicians were registered through reciprocity during the last five years, an average of 1,954 each year. After 1920 there was a reduction each year, including 1922. In 1923 there was an increase of 314, but in 1925 a reduction of 674. Of the 9,768 candidates registered during the five years, 1,255 obtained their original licenses in Illinois, the next largest number being 570 in New York.

Table K shows what state boards granted the original licenses of those registered elsewhere under the reciprocity provision during the last five years. Of the 9,768 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 1,255 who obtained their original licenses in Illinois. Although New York has a larger number of medical college graduates each year than Illinois, only 570 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is accounted for by the fact that Illinois has reciprocal relations with twenty-eight states, while New York has relations with only eight.

UNLICENSED GRADUATES

Table L shows the number of physicians in each graduating class since 1910 who, evidently, have not yet received licenses from some state licensing board. Besides the total number of graduates each year, the table shows for 1925 the numbers remaining unlicensed in each class since 1910. The number of graduates of 1925 who are unlicensed are mostly interns, while those in previous classes include teachers, laboratory workers, including bacteriologists and pathologists, and others indirectly connected with the medical profession, but not engaged in diagnostic work. Some of these unlicensed physicians reside abroad and may have received the right to practice, but have never secured licenses in the United States. The fact that many internships extend over eighteen months or two years doubtless accounts for the large number of graduates of 1924 who are still unlicensed. The number of unlicensed graduates of Canadian schools is also shown.

Of the 2,777 graduates in the United States who are still unlicensed (fourth and fifth column), 260 have each failed in from one to twelve separate examinations for licensure, making a total of 574 failures. It is an interesting fact, although not shown in the table, that approximately half of the individuals who failed are graduates of class C medical schools.

IMPROVED STANDARDS OF LICENSURE

Table M shows the states that have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine, and also the states that require a year's internship in a hospital. The first, third and fifth columns show, respectively, when the requirements affected students matriculating in medical colleges, and the second, fourth and sixth columns give the years in and after which all applicants for licenses are affected by the requirement. This table shows the rapidity with which higher requirements of preliminary education were adopted by state boards since 1908. Prior to that year, no state was requiring as a standard of preliminary education more than a high school education. There are now

TABLE L.—*Number of Medical Graduates in Each of the Years Given Who Have Not Yet Obtained Licenses to Practice*

Class of	United States Medical Schools				Canadian Medical Schools	
	Total Graduates	Still Unlicensed in 1925	Failed at Exam.		Total Graduates	Still Unlicensed in 1925*
			Persons Failed	Times Failed		
1910	4,440	74	5	8	308	11
1911	4,273	82	7	15	342	14
1912	4,483	69	8	14	263	15
1913	3,981	65	10	13	305	14
1914	3,594	85	5	46	321	19
1915	3,536	69	14	37	318	19
1916	3,518	100	11	44	206	21
1917	3,379	127	10	21	315	15
1918	2,670	99	18	48	270	17
1919	2,656	108	10	24	296	15
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Indiana	1910-11	1914	1911-12	1915	....	....
Iowa	....	....	1911-12	1915	1918-19	1923
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Louisiana	1915-16	1919	1918-19	1922	....	....
Maine	1915-16	1919	1916-17	1920	....	....
Maryland	1914-15	1918	1918-19	1922	....	....
Massachusetts†	....	....	....	....	....	....
Michigan	1914-15	1918	1918-19	1922	1917-18	1922
Minnesota	....	....	1908-09	1912	....	....
Mississippi	1915-16	1919	1919-20	1923	....	....
Missouri*	....	....	....	....	....	....
Montana	1914-15	1918	1918-19	1922	....	....
Nebraska*	....	....	....	....	....	....
Nevada*	....	....	....	....	....	....
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North Dakota	....	....	1908-09	1912	1913-14	1918
Ohio	....	....	....	....	....	....
Oklahoma	1914-15	1918	1917-18	1921	....	....
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That all applicants undergo an examination for license	45	50	5	0
Hospital intern year required	0	12[2]	12	38
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John G. Bowman, Dr. Eugene L. Opie, Dr. Lewis A. Conner, Dr. J. M. T. Finney, Dr. W. S. Leathers, Dr. O. H. Perry Pepper, Dr. J. Whitridge Williams and Dr. Howard T. Karsner. The secretary-treasurer is Dr. J. S. Rodman, and the managing director is Mr. E. S. Elwood.

Up to Dec. 31, 1921, eleven examinations had been held, as follows.

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington . .	12	9	3	33.3
Oct., 1917	Chicago . . .	28	22	6	21.5
Jan., 1918	New York ...	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia ..	52	51	1	1.9
Feb., 1920	Chicago, St. Louis .	48	36	12	25.0
May, 1920	Philadelphia	60	46	14	23.3
Feb., 1921	Rochester, Minn .	16	11	5	31.3
June, 1921	Boston	40	37	3	7.5
	Totals	325	268	57	14.4

Following the completion of each examination shown in the table, those who passed were granted the board's certificate, a total by Dec. 31, 1921, of 268.

New Methods Adopted

In 1922, however, the examinations were divided in three parts, as follows: Part I, a written examination in the six fundamental medical sciences: anatomy, including histology and embryology, physiology, physiologic chemistry; general pathology, bacteriology; materia medica and pharmacology. Part II, a written examination in: medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene, and medical jurisprudence. Part III, a practical examination in each of the following four subjects: (*a*) clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; (*b*) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (*c*) obstetrics and gynecology, (*d*) public health, including sanitary bacteriology and the communicable diseases.

Parts I and II are written examinations held in any class A medical school, and part III is an entirely practical and clinical examination given by subsidiary boards in Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, Portland (Ore.), and Nashville. The fees are as follows: registration fee, $5; part I, $10; part II, $15; part III, $50.

Examinations in Part I

Three examinations in part I were held in 1925, as follows:

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1925 . .	143	116	6	21	14.7
June, 1925	324	205	31	88	27.2
September, 1925	141	79	13	49	34.8
Totals, 1925	608	400	50	158	26.0
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1922	388	263	58	67	17.3
Totals	2,094	1,427	254	413	19.7

Altogether, 608 candidates were examined in 1925, as compared with 591 in 1924, 507 in 1923 and 388 in 1922. During the last four years, under the new plan, 2,094 candidates were examined, or more than six times as many as were examined in the six years of the old plan—from 1916 to 1921. Of all those examined in part I during the last four years, 413, or 19.7 per cent, failed.

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Three examinations in part II were held in 1925, as follows:

Date of Examination	Total Examined	Passed	Incomplete	Failed	Percentage Failed
February, 1925..............	84	74	...	10	11.9
June, 1925	167	151	...	16	9.6
September, 1925..............	91	84	. .	7	7.7
Totals, 1925	342	300	...	33	9.6
1924	267	227	...	40	14.9
1923	192	170	2	20	10.4
1922 .	109	90	...	19	17.4
Totals	910	796	2	112	12.3

During 1925, 342 candidates were examined in part II, as compared with 267 in 1924, 192 in 1923 and 109 in 1922. Altogether, 910 candidates were examined during the four years, of whom 112, or 12.3 per cent, failed.

Examinations in Part III

The examinations in part III in 1925, which were entirely clinical and practical, were held in several of sixteen subsidiary centers in different parts of the country. The results of the examinations were as follows:

Examinations of	Total Examined	Passed	Failed	Percentage Failed
1922	28	28	..	0.0
1923	76	75	1	1.3
1924 . . .	120	114	6	5.0
1925 .	217	206	11	4.1
Totals . ..	441	423	18	4.1

In 1925, 217 candidates were examined in part III, as compared with 120 in 1924, seventy-six in 1923 and twenty-eight in 1922. During the four years, therefore, 441 candidates were given the final practical examination and, of these, eighteen, or 4.1 per cent, failed.

Total Individuals Examined During Three Years

Year	Parts I, II and III, Excluding Duplications				
	Examined	Passed	Incomplete	Failed	Percentage Failed
1922 .. .	525	381	58	86	16.4
1923	775	594	79	102	13.4
1924 ..	978	756	69	153	15.6
1925 ..	1,167	915	50	202	17.3
Totals.. . ..	3,445	2,646	256	543	15.8

Omitting duplicates, there were 1,167 individuals who took the National Board's examinations during 1925, as compared with 978 in 1924, 775 in 1923, and 525 in 1922. The percentage of failures was 17.3.

In General

Of the failures, it is noted that during the last four years, 19.7 per cent of the candidates failed in part I, 12.3 per cent of the candidates failed in part II, and 4.1 per cent of the candidates failed in part III. Altogether, 3,445 candidates participated in the National Board's examinations during the four years since Jan. 1, 1922, and of these, 543, or 15.8 per cent, failed.

Of those who took examinations in parts I and II during the four years, 256 are listed as incomplete. These are candidates who took examinations in all but one of the subjects included in parts I and II and are listed as incomplete until they have taken an examination also in the remaining subject. In the statistics, however, although mentioned separately, they are counted as successes and not failures.

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SATURDAY, MAY 15, 1926

STATE LICENSE STATISTICS

For the twenty-third consecutive year, statistics are offered based on examinations held by state licensing boards during the last calendar year. The publication of these complete statistics is made possible through the cordial support received from the secretaries of licensing boards, to whom we express sincere appreciation.

DATA ACCURATE

Reports of individual examinations have been carefully checked with lists of graduates furnished by medical college officials. In this way any error in regard to the full name of the physician, name of the medical school or year of graduation has been corrected and the accuracy of the statistics thereby assured. Through this checking, also, attention is directed at once to applicants who graduated from diploma mills or other institutions unworthy of consideration as medical schools. In such instances state officials are promptly notified, and in most instances the licenses are revoked.

IMPORTANCE OF LICENSURE STATISTICS

The publication of state licensure statistics permits comparative study of the methods followed by the various boards and their relative efficiency. The statistics also show that, from the standpoint of scientific medicine, methods of licensure have been immensely improved during the last twenty-five years. The attention called to the high percentage of failures of graduates of certain medical schools has led to prompt improvements, or recognition of them is withdrawn by the licensing boards.

As improvements in entrance requirements, teaching facilities and qualifications of teachers have been made in medical schools, corresponding advances in educational requirements have been adopted by the majority of licensing boards. Since 1908, for example, the requirement of two years of college work in addition to a high school course has been adopted by thirty-nine states.[1] Thus, the licensing boards are supporting the better medical schools in the enforcement of this requirement. Again, since 1914, the number of states refusing recognition to seriously inferior medical schools has increased from fourteen to forty-eight of the fifty states, counting Alaska and the District of Columbia.[2] In the majority of states, therefore, so far as the licensing of physicians and surgeons is concerned, the public is well protected against incompetent physicians. The public is still at the mercy of improperly trained and incompetent practitioners being turned out by the various "schools" of healers bordering on medicine, some of whom have been licensed in certain states against the advice of the medical profession.

DIFFERING STANDARDS OF LICENSURE ILLOGICAL

The medical licensing boards of all states now require of physicians a reasonably high standard of educational and professional qualifications. The minimum standard consists of a high school education; two years of college work; four years of study in a properly established medical school—including a training in the fundamental medical sciences and the practical application of this knowledge by the student in the examination and care of patients in dispensaries and hospitals—and a year's internship in a general hospital, where the student assumes a greater responsibility in the care of the sick while still under the supervision of the hospital staff. If this minimum requirement for training is considered as essential for physicians, a corollary is that no lower standard of education and training should be permitted for any groups of healers who also assume responsibility for the lives of sick or injured people. The legality of a single but reasonably high standard of qualification for all who are to practice the healing art was splendidly set forth two years ago by Harry Eugene Kelly, a Chicago attorney, in an article on "Regulation of Physicians by Law."[3] The adoption of a single standard therein advocated is the only way to safeguard the public against ignorance, bungling and incompetence on the part of those who are licensed to practice medicine.

STATE HOUSE-CLEANINGS IN LICENSURE

During the last three years, Connecticut has been engaged in cleaning up the serious mess caused by the Eclectic Board of Medical Examiners in the licensing of 167 "graduates" of inferior colleges and diploma mills. Since this cleansing process began, the number of such candidates licensed each year decreased from seventy-four in 1922 to none in 1924. During 1925, in spite of the evidence brought out in regard to the fraudulent character of two diploma mills, the Eclectic Board of Connecticut, which is controlled by the debarred eclectic physicians, examined and certified for license another "graduate" of one of those institutions. The license was refused, however, by the health

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[1] See table M, page 1549.

[2] See table D, page 1542.

[3] A. M. A. Bull., June, 1924, part II.

John G. Bowman, Dr. Eugene L. Opie, Dr. Lewis A. Conner, Dr. J. M. T. Finney, Dr. W. S. Leathers, Dr. O. H. Perry Pepper, Dr. J. Whitridge Williams and Dr. Howard T. Karsner. The secretary-treasurer is Dr. J. S. Rodman, and the managing director is Mr. E. S. Elwood.

Up to Dec. 31, 1921, eleven examinations had been held, as follows:

Date of Examination	Where Held	Total Examined	Passed	Failed	Percentage Failed
Oct., 1916	Washington	10	5	5	50.0
June, 1917	Washington	12	9	3	33 3
Oct., 1917	Chicago	28	22	6	21.5
Jan., 1918	New York	20	18	2	10.0
Apr., 1918	Ft. Riley, Ft. Oglethorpe	23	18	5	26.1
Dec., 1918	Chicago, New York	16	15	1	6.3
June, 1919	Philadelphia	52	51	1	1.9
Feb., 1920	Chicago, St. Louis	48	36	12	25.0
May, 1920	Philadelphia	60	46	14	23 3
Feb., 1921	Rochester, Minn	16	11	5	31.3
June, 1921	Boston	40	37	3	7.5
	Totals	325	268	57	14.4

Following the completion of each examination shown in the table, those who passed were granted the board's certificate, a total by Dec. 31, 1921, of 268.

NEW METHODS ADOPTED

In 1922, however, the examinations were divided in three parts, as follows: Part I, a written examination in the six fundamental medical sciences: anatomy, including histology and embryology; physiology, physiologic chemistry; general pathology; bacteriology; materia medica and pharmacology. Part II, a written examination in: medicine, including pediatrics, neuropsychiatry and therapeutics; surgery, including applied anatomy, surgical pathology and surgical specialties; obstetrics and gynecology; public health, including hygiene, and medical jurisprudence. Part III, a practical examination in each of the following four subjects: (*a*) clinical medicine, including medical pathology, applied physiology, clinical chemistry, clinical microscopy and dermatology; (*b*) clinical surgery, including applied anatomy, surgical pathology, operative surgery and the surgical specialties of the diseases of the eye, ear, nose and throat; (*c*) obstetrics and gynecology; (*d*) public health, including sanitary bacteriology and the communicable diseases.

Parts I and II are written examinations held in any class A medical school, and part III is an entirely practical and clinical examination given by subsidiary boards in Boston, New York, Philadelphia, Minneapolis, Iowa City, San Francisco, Denver, New Orleans, Baltimore, Galveston, Cleveland, St. Louis, Chicago, Washington, Portland (Ore.), and Nashville. The fees are as follows: registration fee, $5; part I, $10; part II, $15; part III, $50.

EXAMINATIONS IN PART I

Three examinations in part I were held in 1925, as follows:

Date of Examination	Total Examined	Passed	In complete	Failed	Percentage Failed
February, 1925	143	116	6	21	14.7
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June, 1925	167	151	...	16	9.6
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RECOGNITION OF THE NATIONAL BOARD'S CERTIFICATES

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THE HEMOLYTIC CONSTITUTION

The manifestations of disease are the products of two factors, the patient's own make-up or attributes, and forces from the outside. Much has been done toward elucidating the outside factor, the infections, physical injuries and chemical injuries that are the immediate cause of disease. However, the existence of the individual factor, the special susceptibility to certain affections, has also been recognized at all times, usually under the name of a diathesis of this or that sort. This conception is gaining in importance at present, especially in the field of pediatrics, where different types of children with special predispositions are recognized. The same is true of adults, who also appear to have their tendencies toward particular diseases and their points of special weakness.

Draper, in his book "The Human Constitution," defines constitution as the "aggregate of hereditarial characters, influenced more or less by environment, which determines the individual's reaction, successful or unsuccessful, to the stress of environment." Among these hereditarial characters, Gänsslen[1] and his co-workers place the tendency to increased blood destruction, which may become manifest, depending on the outside influences to which the individual is exposed, as hemolytic icterus. After several years of study of this condition, Gänsslen finds that one can speak of a definite "hemolytic constitution," characterized by congenital increased blood destruction, and manifested in fully developed cases by anemia, icterus and enlargement of the spleen. On investigating the families of persons with these symptoms, he found many instances of the condition, either latent or in active form. In fact, hemolytic icterus is a much more frequent disease than is commonly thought. The frequent lack of definite and active symptoms enables its presence to escape notice.

In its complete development, the disease is manifested by icterus, anemia, enlargement of the liver and spleen, and urobilinuria; with decreased resistance of the erythrocytes, anisocytosis and microcytosis. The icterus is variable in degree, as is the anemia. Both are increased during the so-called hemolytic crises. These are frequently evoked by some intercurrent factor, infections, pregnancy or psychic causes, which provide the occasion for the hitherto latent condition to become active. The crises are often accompanied by colicky pains over the liver and spleen, and, with the icterus, may be taken for gallbladder disease. The hemoglobin is ordinarily from 40 to 70 per cent, but may fall during a crisis to 20 per cent. Examination of the red blood cells reveals the essential nature of the disease: anisocytosis and microcytosis indicate an inferior quality of the cells, which is further shown by their increased fragility in salt solution. These changes vary considerably in degree, but there is close agreement between the abnormality of form and decrease in resistance. Gansslen regards this as the fundamental condition. The icterus and anemia are secondary consequences of the increased blood destruction, when it is no longer compensated by increased formation and the liver is no longer able to cope with the increased iron metabolism. The subjective symptoms are few; if one may quote the oft-cited words of Chauffard, the patients are more yellow than sick.

According to Gansslen, the types, or really degrees, of the hemolytic constitution range from the complete disease picture to the latent form, which is entirely symptomless, and detected only by blood examination and investigation of other members of the family. Compensated forms occur, in which one or more of the chief symptoms are lacking. Thus, among Gänsslen's cases there were 35 per cent without anemia, 40 per cent without icterus, 30 per cent without enlargement of the spleen, and 10 per cent without definite lessening of the resistance. Then there is a group of mildly affected persons, symptomless, with slight or even no change in the red cells, who transmit the hemolytic constitution to their offspring. Recognition of all these incomplete and latent forms is based on suggestive symptoms, usually some change in the red cells, and occurrence of the condition, often in more complete form, in other members of the family. The latent types, given the proper stimulus from the outside, may become active at any time.

An interesting point, emphasized by Gänsslen and demonstrated in many of his cases, is the frequent combination of other congenital anomalies with the hemolytic constitution. Anomalies of the skull, tower skull and negroid shape, are especially frequent; also polydactylia, microphthalmia, epicanthus, amblyopia, deformities of the ear, and congenital heart lesions. Combinations with endocrine disturbances also occur. This association with congenital defects may help in making the diagnosis of familial hemolytic icterus, and is of course an additional argument for its constitutional character.

One extensive family tree investigated by Gänsslen comprised six generations and 169 persons. Of these, commissioner of Connecticut, and mandamus proceedings were resorted to. The decision will soon be rendered. In Missouri, also, a new licensing board has been established; the two medical schools in that state have been prosecuted, and conditions in licensure have been much improved. Whether the charters of the two diploma mills are to be revoked is to be decided by the Missouri Supreme Court. One of these mills, the Kansas City College of Medicine and Surgery, in spite of the legal proceedings, issued diplomas to four "graduates" during 1925, to whom the Arkansas Eclectic Board promptly granted licenses—as well as to fifteen other graduates of this school whose diplomas bore earlier dates. It is evident, therefore, that a vigorous house-cleaning in licensure is much needed in Arkansas also.

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[1] Gansslen, M.; Zipperlen, E., and Schüz, E.: Die hamolytische Konstitution, Deutsches Arch f klin. Med. **146**: 1, 1925. Gänsslen: Ueber hamolytischen Ikterus, ibid. **140**: 195, 1922.

NEED OF FURTHER PUBLICITY

The protection of the public in regard to the menace from sectarians of various types depends mainly on publicity. State regulations are based on public sentiment, which thus far has been formulated largely by the selfish and misleading clamor of sectarian groups. It is important, therefore, that a wider publicity be given to the established and reliable facts regarding modern medicine and the benefits obtainable from the improved methods of diagnosis and treatment. Indeed, it is believed that public sentiment is now turning rapidly to the truths of scientific medicine.

From the standpoint of medical licensure, the solution of the problem is simple: Secure in each state one medical practice law establishing a reasonably high standard of educational and professional qualifications which should be possessed by every one who is to secure the legal right to practice the healing art, and a competent board of medical examiners to carry out the provisions of the law.

"HOOCH," "HOME BREW" AND COPPER

The toxicity of many of the heavy metals has been known for generations, yet these substances have not been regarded as a menace to human health except in limited instances where industrial conditions or occupational circumstances exposed workers to the chemical hazards in some uncommon way. However much the student of vocational diseases might become concerned with the effects of metallic poisons, the treatises on public health and personal hygiene rarely discuss them except in a casual manner. As a consequence of modern economic and social changes, the latent dangers of poisoning from certain heavy metals are now suddenly presented to the public at large. To gasoline and the automobile we owe the nation-wide concern about lead;[1] suicides and syphilis have awakened a new interest in mercury not merely as a drug but also as a poison; and now the advent of the "bootlegger" and home brew has brought copper to our toxicologic attention.

In his Mellon Lecture at Pittsburgh, Mallory[2] of Boston pointed out that we are constantly exposed to the action of copper. The fact that our organs on chemical examination yield a certain amount of it does not mean that copper is a normal and necessary component of the body but that we cannot get away from it. This does not mean, Mallory adds, that we are all suffering from copper poisoning. It seems perfectly evident that we can handle a certain amount of the metal without danger, perhaps from 5 to 10 mg. a day, possibly more. The only visible effect may be the presence of a little hemofuscin in fibroblasts in the liver and some of the other organs where it cannot be transformed into hemosiderin and then be gradually dissolved and removed. If, however, the amount absorbed exceeds a certain definite limit, the danger of pigmentation of the liver and pancreas is evident. Mallory sees the evidence slowly but steadily accumulating in favor of the view that chronic poisoning with copper causes the symptom complex known under the different names of hemochromatosis, bronzed diabetes and pigment cirrhosis. As if it were not damaging enough to the reputation of alcohol to be charged directly with being a possible cause of hemochromatosis, chemists have demonstrated that present-day distilled liquors may contain as much as 185 mg. of copper per liter. It is reported that the director of the division of foods and drugs of the department of public health of Massachusetts has tested 798 samples of "hooch" and found copper present from a trace up to 32 mg. to the liter in 10.8 per cent. Samples of even "home brew" have been found on chemical examination to show the presence of 25 mg. of copper to the liter. The introduction of the metal is not to be attributed to malicious intent but rather to the action of organic acids in the mash distilling over with the alcohol and acting on the copper worm of the condenser when that metal is used. Mallory states that cocktail shakers are usually made of copper or brass and lined with silver or tin. When the latter metals are worn or dissolved off, the acids, for example, citric, in the ingredients readily attack the copper. The shakers used at soda water fountains for mixing lemonades are usually made of copper. It would be manifestly unjust to imply that alcoholic beverages provide the only likely sources of copper that man may ingest. Copper pots and kettles, copper and brass pipes, find use in culinary practices or the experiences of everyday life.

Mallory's advice seems wholesome: Copper is an exceedingly useful and indispensable metal in many ways, but it should not be employed where it may come in contact with foods or drinks, especially if they contain acids of any sort, because it is readily dissolved by many of them. This would exclude its use for cooking utensils of any sort, for shakers of cocktails and acid drinks, and for the worms of the condensers in stills. Copper has joined the company of lead, mercury, zinc, arsenic, carbon monoxide, methyl alcohol, and noxious war gases to worry the ranks of the peaceful citizen who only a few years ago could safely be left in complete oblivion of the existence of such hazardous chemical substances.

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[1] "Ethyl Gas"—Tetra-Ethyl Lead, J. A. M. A. **83**: 552 (Aug. 16) 1924. Tetra-Ethyl Lead—Another Industrial Hazard, editorial, ibid. **83**: 1511 (Nov. 8) 1924. The "Ethyl" (Tetra-Ethyl Lead) Gasoline Report, ibid. **86**: 353 (Jan. 30) 1926. Committee Report on Ethyl Gasoline, ibid. **86**: 370 (Jan. 30) 1926. The Absorption of Lead Through the Skin, ibid. **86**: 1286 (April 24) 1926.

[2] Mallory, F. B.: Hemochromatosis and Chronic Poisoning with Copper, Arch. Int. Med. **37**: 336 (March) 1926.

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One extensive family tree investigated by Gänsslen comprised six generations and 169 persons. Of these, as far as could be determined, eleven had fully developed hemolytic icterus; thirty-three had compensated cases; there were thirteen mild cases; and twenty-six persons, including many of those with hemolytic symptoms, had anomalies of the skull. He finds that hemolytic icterus is inherited as a dominant character, although it sometimes appears to be recessive on account of the frequent latent form, and appears in and is transmitted by both males and females.

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[1] Gänsslen, M.; Zipperlen, E., and Schüz, E.: Die hämolytische Konstitution, Deutsches Arch. f. klin. Med. **146**: 1, 1925. Gänsslen: Ueber hamolytischen Ikterus, ibid. **140**: 195, 1922.

Nothing much need be done for the mild or latent cases of this disease. Splenectomy usually is advised for all young persons with high grade anemia or severe hemolytic crises. While not often fatal in itself, early deaths are rather frequent among persons with hemolytic icterus. The mortality of the operation is low, and the beneficial effects on the symptoms and general condition are often astounding. The anemia and icterus usually disappear entirely, although the changes in form and resistance of the red cells may remain. A return of the icterus after removal of the spleen, incident to some intercurrent infection, has been noted, and this fact furnishes additional evidence that hemolytic icterus is primarily a disease of the blood cells, and is not due to overactivity of the spleen.

Current Comment

LICENSING OF FOREIGN PHYSICIANS

Heretofore physicians from abroad have always been welcomed by licensing boards in this country, and in most states the requirements, if different at all, were less strict than for graduates of our own American schools. In this connection, physicians coming from Canada have hardly been considered as foreigners. Their qualifications are as clearly recognized as those coming from medical schools of the United States. This is because Canadian physicians have had their part in the movement instigated by the medical profession of this country to improve the standards of medical education and licensure. Many of the physicians who came from abroad, also, have long since become honored members of the communities in which they reside and are mostly active members of our medical organizations. Even at this time, therefore, there is no desire to establish unreasonable restrictions against foreign physicians, especially those who are bona fide graduates of well recognized medical schools and who come from countries whose laws, customs and manners of living are similar to those of the United States. Since the World War, however, a necessity for reasonable restrictions has developed. The numbers of physicians seeking licensure in this country have been increasing, as a result largely of the financial stress in their own countries from which they are endeavoring to escape. Among these there has been an unusual proportion whose credentials were of doubtful validity or distinctly fraudulent. It has become necessary for state authorities to establish legal safeguards over the admission of physicians from abroad. The requirement of American citizenship as an essential for the license has been adopted in eleven states;[1] in ten other states[2] foreign physicians must have taken out their first naturalization papers before being eligible for a license, and in five states[3] foreign physicians must have declared their intention to become American citizens. In Michigan and New York, in uncertain cases, a year's work in a medical school in this country must have been completed, while in Pennsylvania the foreign physician is required to have completed an internship in a hospital recognized by the licensing board. These regulations, although representing a change of attitude on the part of state licensing boards, are still much more lenient than the requirements in countries abroad with which American physicians must comply. There is still the desire to welcome from abroad those who are properly qualified and who will become reputable and worthy members of their communities. The restrictions are necessary, however, to prevent the inpouring of those who are not properly qualified or who in other respects are undesirable. Under no circumstances should physicians from abroad be accepted unless their credentials have been carefully verified and unquestionable proofs obtained of identity.

ARKANSAS STILL INACTIVE

Arkansas is one of the two remaining states that have separate boards of eclectic medical examiners. In the last ten years this board has licensed 227 graduates of inferior medical schools, of whom 199 held degrees from the Kansas City College of Medicine and Surgery—exposed two years ago as a diploma mill—for which legal proceedings looking toward the revocation of its charter are now in process. Following the exposure of the Missouri diploma mill ring, vigorous legal measures were promptly and successfully taken in Connecticut, California and other states toward revoking the licenses of those registered on the basis of such diplomas. Arkansas, however, has continued inactive in spite of the odium resting on the character of such applicants. In spite of the glaring disclosure of the Kansas City College of Medicine and Surgery as a diploma mill, the eclectic board has calmly continued to provide state licenses for such "graduates"! Although only one such graduate was licensed in 1924, this was evidently due not to any qualms of conscience on the part of the board but to the temporary inactivity of the diploma mill concerned because of the court investigation. Is it not time that Arkansas should undergo a house cleaning? Is it content to remain in the clutches of Alexander and his diploma venders? Is Arkansas satisfied to have its sick and injured citizens subjected to such ignorance, incompetence and bungling?

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[1] These states are: Arizona, Arkansas, Florida, Illinois, Indiana, Kansas, Kentucky, Mississippi, South Dakota, Tennessee and Wyoming.

[2] These states are: Alabama, Delaware, Louisiana, Maryland, Michigan, New Hampshire, North Dakota, Oregon, Texas and Virginia.

[3] These states are: Minnesota, Nebraska, New Jersey, New York and Ohio.

Education of Spartan Women.—Not much is known of the training imposed on the Spartan girls; but it included both gymnastics and music.—Leonard: History of Physical Education, pp. 19-20.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Sanitation in Mining Towns.—A survey of mining towns in Alabama made by the U. S. Bureau of Mines, cooperating with the U. S. Public Health Service, indicates that sanitation in these towns receives more consideration than in most of the other coal fields of the country. At one time, communicable diseases in these communities made it necessary to employ 165 men in order to keep 100 men working, and mines occasionally were forced to shut down until an epidemic passed. This led the larger mining companies to install health departments, and health conditions have improved; in the last few years, there has been a decrease of thirty-five men per hundred necessary to keep 100 men working, and no epidemic has closed any mines in the state. The state board of health through county health units cooperates in this work; schools are inspected by camp physicians and the county health officers, when available. It is still difficult in mining towns where employees own their own homes to maintain sanitation. The sanitary rating of the towns covered by the survey varied from 43.75 to 95.50, and averaged 69.32. The water supply had the best rating of all the features; sewage disposal had a rating of about 50 per cent of the normal, and the rating on general sanitation was fair. Only the very small mines in Alabama are not actively engaged in sanitary work now, and while they assert that they are not financially able to maintain health departments, they have adopted many of the methods put into operation by the larger mining companies.

ARIZONA

State Medical Election.—At the recent annual meeting of the Arizona State Medical Association at Globe, April 26-28, Dr. Charles S. Vivian, Phoenix, was elected president elect; Drs. Arthur C. Carlson, Jerome, Hilary D. Ketcherside, Yuma, and Harold W. Rice, Morenci, vice presidents; Dr. Clarence E. Yount, Prescott, treasurer, reelected, and Dr. Delamere F. Harbridge, Phoenix, secretary (reelected for the tenth time). The next meeting will be at Yuma in April, 1927.

CALIFORNIA

State Medical Election.—At the recent annual meeting of the California Medical Association, Oakland, April 26, Dr. William T. McArthur, Los Angeles, was elected president; Dr. Percy T. Phillips, Santa Cruz, president-elect; Dr. Robert V. Day, Los Angeles, vice president, and Dr. Emma W. Pope, San Francisco, secretary.

Hospital News.—The Children's Hospital, San Francisco, will build this year a wing costing about $350,000 for a maternity department and physiotherapy department.——The new Providence Hospital, which is being erected at Central Avenue and Thirtieth Street, Oakland, is expected to be completed not later than July; it will have a total capacity of 350 beds.

Japanese Quack Fined.—A Japanese, one A. Nemoto of East San Pedro, was arrested, February 15, charged with violating the state medical practice act. Nemoto claimed to be a graduate of medicine of Tokyo University and had been located in East San Pedro more than a year. His reception room was an innocent appearing place with nothing to indicate that it was a doctor's office, but when Nemoto was forced to unlock the adjoining room, after he had assured the authorities that he was not practicing medicine and that the room was not his, a completely equipped doctor's office was found. It contained operating tables, surgical instruments, sterilizers, hypodermic needles, a large supply of medicines and record slips, indicating that Nemoto had treated a number of Japanese patients. When arraigned, Nemoto pleaded guilty and stated that he had assembled the equipment to use in Mexico, where he said he was arranging to go; he said further that he had treated a few of his friends, not knowing that he was violating the law. He was sentenced to pay a fine of $100 or serve a hundred days in jail. He paid the fine.

COLORADO

Dr. Mills Resigns.—Dr. Ralph G. Mills, professor and head of the department of pathology, University of Colorado School of Medicine, Denver, has resigned to accept a position on the permanent staff in pathology of the Mayo Clinic, Rochester, Minn., which carries with it a full professorship in pathology at the University of Minnesota. Dr. Mills will take up his work in Rochester before July 1.

CONNECTICUT

Meaning of Certified Oysters.—The state department of health says that a certificate is not a guarantee of each particular shipment of oysters, but that all desirable safeguards have been taken to insure that the public is receiving a safe product. Certification in Connecticut means that: (1) the dealer agrees to ship oysters only from areas which have been inspected and analyzed by the state department of health and which have been found to be satisfactorily located; (2) the shucking and packing establishment has been inspected and found in a sanitary and satisfactory condition, and (3) all persons in the establishment engaged in shucking, handling and packing oysters have been examined and found free from typhoid bacilli.

GEORGIA

Hospital News.—The new Blackman Health Resort, 1824 Peachtree Road, Atlanta, succeeding the Blackman Sanatorium at 172 Capitol Avenue, was opened, March 29.——Dr. Joe R. Clemmons has been appointed superintendent of the Macon Hospital, Macon, effective, May 1.

Personal.—Dr. Charles L. Ridley, city-county health officer at Macon, resigned, May 1, to become the chief medical director of the Bankers' Health and Life Insurance Company.——Dr. John W. Oden, for eight years on the staff of the Georgia State Sanitarium, Milledgeville, has resigned to accept a position with the Children's Hospital for the Feeble Minded in Augusta.——Dr. John M. T. Finney, Baltimore, was recently the guest of the Richmond County Medical Society.

ILLINOIS

Dr. Krafft Honored.—The meeting of the Physicians' Fellowship Club, Chicago, May 7, was held in honor of Dr. Jacob C. Krafft, president of the Illinois State Medical Society. Among those who rendered tribute to Dr. Krafft's service to medicine in Illinois were Drs. Edward H. Ochsner, John R. Neal, Harold M. Camp, James W. Vanderslice, Jeremiah H. Walsh and William D. Chapman.

Personal.—Dr. Placid N. Chiasson, Griggsville, has been elected president of the Pike County Medical Society; Dr. William Shastid, secretary and treasurer of the society for the last twelve years, retired, and Dr. Frank N. Wells, Pittsfield, was elected secretary-treasurer.——Dr. Charles Lieber, Waukegan, has been reappointed county physician of Lake County.——Dr. Edward A. Glasgow, Mulberry Grove, has been reelected president of the Bond County Medical Society and Dr. Thomas G. Charles, Beardstown, has been elected president of the Cass County Medical Society.

Society News.—The Golden Anniversary of the Central Illinois Medical Society was celebrated at Pana, April 27. Dr. John H. Miller, Pana, gave an address on "The Early History of the District Medical Society of Illinois." Clinics were held at the Huber Memorial Hospital. Dr. Arthur O. Fisher, associate in clinical surgery, Washington University Medical School, St. Louis, gave an illustrated lecture on "Recent Aids in the Diagnosis of Gallbladder Diseases and Other Abdominal Conditions," and Dr. Llewellyn Sale, St. Louis, spoke on "Tests for Liver Function"; Dr. Theodore Thompson, Shelbyville, was elected president of the society; Dr. Jesse P. Simpson, Palmer, vice president, and Dr. Franklin A. Martin, Pana, secretary-treasurer.

Counties Having Highest Tuberculosis Mortality.—Union County and the contiguous counties of Pulaski and Alexander in the southern part of the state comprised the area of heaviest tuberculosis mortality last year, according to the state health director; Union County had a mortality rate of 296 per hundred thousand population, and Pulaski and Alexander counties, 239 and 154, respectively. The area of lightest tuberculosis mortality comprised Woodford, Marshall and Carroll counties in the northern part of the state, where the rates were 10.20 and 20.5, respectively. Among the forty-four cities of 10,000 or the highest mortality rate from tuberculosis (276) was reported from Lincoln; then came Jacksonville (208); then Cairo (200); Ottawa had the lowest municipal rate (26); then came Rockford (32); then Streator (33).

Chicago

University News.—Dr. David J. Davis gave the last of the series of lectures on the history of medicine at the University of Illinois College of Medicine, April 21; his subject was "Contributions Which the Quakers Have Made to Medicine."

Cooperation Among Medical Libraries.—Representatives of the larger medical libraries of Chicago met, May 8, to discuss the medical library situation of that city with a view to working out some form of cooperation whereby the duplication of expensive and rarely used material may be avoided and such material be made mutually accessible. As a preliminary to such action, it seemed necessary to agree on some outline of the scope of the various libraries. Those present were impressed with the importance of such cooperation and the benefits that might be expected in the expenditure of available funds as well as in the general administration of the several libraries. Dr. William F. Petersen, professor of general medicine, University of Illinois College of Medicine, was appointed chairman of a committee to work out some definite form of coordination.

Hospital News.—The Garfield Park Hospital is planning a $690,000 building to be constructed on the site of the present nurses' home. St. Anne's Hospital is drawing plans for a 250 bed addition which will cost about $800,000.——The University of Chicago has been bequeathed $500,000 by the will of Mrs. Harriet Smith for the construction of a contagious disease hospital to be known as The Charles Gilman Smith Hospital.——The Albert Billings Memorial Hospital group at the University of Chicago will be turned over for operation about Jan. 1, 1927.——Construction work was started, May 3, on the new six story Rogers Park Hospital at 6970 North Clark Street, the capacity of which will be 102 beds. Dr. F. Patrick Machler, formerly superintendent of the Iroquois Hospital, is president of the organization.——A $275,000 medical office building is being erected on the West Side at Madison Street and Kilbourn Avenue, which is being financed by the West Town State Bank. There will be forty offices for physicians and dentists.

INDIANA

Hospital News.—The board of trustees of the Methodist Hospital has authorized the expenditure of $850,000 to improve the Methodist hospitals at Indianapolis and Gary.——A banquet was tendered, April 8, to members of the Laporte County Medical Society and many other physicians in the surrounding cities to celebrate the formal opening and dedication of the new Clinic Hospital Building at Fifth and Pine streets, Michigan City. Dr. Burton Hazeltine, Chicago, was toastmaster, and the principal speaker was Dr. Charles B. Reed, formerly professor of obstetrics at Northwestern University Medical School, Chicago.

Personal.—Dr. Harvey H. Martin, Laporte, was elected president of the Northern Tri-State Medical Association (Ohio, Indiana, Michigan) at the recent meeting in Lima, Ohio.——Dr. C. M. White celebrated the completion of his fiftieth year in medical practice at Clinton, March 11.——Dr. Charles H. DeWitt, Valparaiso, has been appointed health officer of Porter County.——The governor has reappointed Dr. William A. Spurgeon, Muncie, and Dr. Jesse W. Bowers, Fort Wayne, members of the state board of medical registration for terms of four years.——Drs. Eli L. Youngblood and Paul E. Wilson have been appointed members of the board of health of Boonville.

KANSAS

State Medical Meeting.—The visiting guests at the sixtieth annual meeting of the Kansas Medical Society, Kansas City, May 4-6, included Dr. John M. Dodson, Chicago, former dean of Rush Medical College, who spoke on "Medical and Health Education of the Laity"; Dr. Harry C. Goodson, Colorado Springs, "General and Local Rest in the Treatment of Pulmonary Tuberculosis"; Dr. Jacob P. Greenhill, Chicago, "Management of the Second Stage of Labor"; Dr. George C. Mosher, Kansas City, Mo., "The Campaign for Better Obstetrics"; Dr. Hiram Winnett Orr, Lincoln, Neb., "Fractures", and Dr. Warren H. Cole, St. Louis, "Gallbladder Research Work."

KENTUCKY

Miscellaneous Items.—The health officer of Charlestown closed the schools of that community, April 22, it is reported, because of an outbreak of five cases of smallpox among the pupils; graduating exercises were to have been held in the high school the following day.——Dr. Ralph Holt, Grahamville, has been elected county physician of McCracken county for four years, to succeed Dr. Louis E. Young, Milan.——Construction work has started on the new Deaconess Hospital at Clifton Avenue and Straight Street, Covington.——The Good Samaritan Hospital, Lexington, has let the contracts for a $300,000 four story addition to be erected on South Limestone Street.

Court Upholds Board of Health.—Judge Clay of the Court of Appeals, Frankfort, March 20, upheld the state board of health's ruling which requires that no person shall become a member of any public or private school within the jurisdiction of the board, either as a teacher or a pupil, without furnishing a certificate from a reputable physician that he has been successfully vaccinated, and has been revaccinated at least once every seven years. The judge overruled the motion of several persons from Ashland for a temporary injunction enjoining the Boyd County Board of Health, the health officer and school board of Ashland from enforcing this rule; he said that the state and local boards of health have the power when there is a reasonable apprehension of an epidemic of smallpox in the school to order vaccinations, and that the evidence in this case did not disclose any abuse, on the part of the defendants, of this discretion.

MARYLAND

State Medical Election.—At the one hundred and twenty-eighth annual meeting of the Medical and Chirurgical Faculty of Maryland, April 27-29, Baltimore, Dr. Thomas S. Cullen was elected president; Drs. John L. Riley, Snow Hill, Standish McCleary, Baltimore, and Frank W. Keating, Owings Mills, vice presidents; Dr. Joseph Albert Chatard, Baltimore, secretary, and Dr. Charles E. Brack, Baltimore, treasurer.

Child Health.—Sponsored by the American Child Health Association, a program to improve child health will be presented throughout the state during May; exercises have been held in the schools throughout the state to forward the program. Dr. James H. Mason Knox, Jr., of the state health department, is chairman of a committee of ninety who are endeavoring to obtain a wide-spread cooperation in carrying out the program.

University News.—Johns Hopkins University Medical School, Baltimore, has created the position of secretary, to which Lawrence H. Baker, Ph.D., has been appointed. Dr. Baker will also act as registrar of the medical school.——Dr. Horace Lo Grasso, superintendent, J. N. Adam Memorial Hospital, Perrysburg, N. Y., gave one of the De Lamar lectures at the Johns Hopkins University School of Hygiene and Public Health, April 12, on "Clinical Results of Heliotherapy."

Charles E. Dohme Lectures.—Dr. Walter Ernest Dixon, professor of materia medica and pharmacology, Kings College, University of London, delivered the fourth series of lectures of the Charles E. Dohme lectureship at the Johns Hopkins School of Hygiene and Public Health, May 7-10; the subjects were: (1) The Nature, Secretion and Circulation of the Cerebrospinal Fluid. The Influence of Drugs on the Secretion. (2) The Vascular System of the Brain and Its Comparison with That of the Pulmonary System. The Influence of Drugs on Cerebral Vessels. Shock. (3) The Pituitary Gland. The Influence of Pituitary, Alimentary and Ovarian Extracts. The Action of Pituitary Extracts on the Uterus.

Personal.—Dr. Charles C. Hedges, former health commissioner of Marshall County, W. Va., has assumed the duties of assistant director of the Johns Hopkins Hospital, succeeding A. W. Buck.——Dr. Worth B. Daniels, son of the former secretary of the navy, has been appointed an intern at Johns Hopkins Hospital; Dr. Daniels graduated from the medical school in 1924; Edmund B. Kelly and Christopher Johnston, senior students at the John Hopkins Medical School, have also received appointments as interns. Mr. Kelly is a son of Dr. Howard A. Kelly, and Mr. Johnston is the grandson of the late Dr. Christopher Johnston.——Dr. Wilfred T. Grenfell of the Grenfell Mission gave an illustrated lecture, April 26, at the Medical and Chirurgical Faculty Building, Baltimore, on "Missionary Work in Labrador."

MASSACHUSETTS

Research on Yaws—The Department of Tropical Medicine of Harvard University Medical School, Boston, and the Bureau of Science, Manila, P I, have been directing the expenditure of a fund provided by Mr H A Metz, New York, for the study and control of yaws (frambesia tropica) The work has been done in the Philippine Islands, where the government hospitals and laboratories of the bureau of science and the Philippine Health Service afford facilities for clinical and experimental study The results of about five years' work will be published in a forthcoming number of the Philippine Journal of Science

Personal—Dr Harvey Cushing, Harvard University Medical School, Boston, author of "The Life of Sir William Osler" was awarded the $1,000 prize for "the best American biography teaching patriotic and unselfish service to the people, illustrated by an eminent example,' by the judges of the Pulitzer prizes——Dr Morton Prince will take up the duties next September, of associate professor of abnormal and dynamic psychology in Harvard University, Dr Henry A Murray, Jr, has been appointed research fellow in abnormal and dynamic psychology and will work with Dr Prince, who formerly was clinical instructor in diseases of the nervous system at Harvard and professor of nervous diseases at Tufts College Medical School, Boston, from 1902 to 1912

MICHIGAN

Society News—The Michigan State Medical Society has planned three postgraduate conferences for May and early June, at Alpena, May 6 Fremont, May 11, and a third conference at Jackson——The county medical societies that have already arranged for or conducted a special meeting on periodic health examinations are St Clair, Washtenaw Alpena, Lenawee, Muskegon, Jackson, Houghton and the Tri-County Medical Society——Dr Alexander J MacKenzie Port Huron, addressed the St Clair County Medical Society, April 1, at Port Huron on "Infections of the Gallbladder Dr William H Marshall, Flint, addressed the society, April 15, on "Periodic Physical Examinations of the Apparently Healthy"——Dr Robert B. Preble, Chicago, addressed the Calhoun County Medical Society, April 6, on "Pneumococcus Pneumonia"——Dr Philip D Bourland, Calumet, addressed the Houghton County Medical Society, April 6, on "Clinical Value of the Electrocardiograph"——Dr Arthur C Tompsett, Hesperia, has been elected president of the Newaygo County Medical Society, and Dr. William H. Barnum, Fremont, secretary.

NEW HAMPSHIRE

Cancer Campaign.—The state committee of the American Society for the Control of Cancer, which met at Concord, April 16, under the chairmanship of Dr Fred E Clow, Wolfeboro, decided to launch a campaign of education throughout the state in October, and to ask the state medical society to assist in procuring funds from the legislature to build a hospital for incurables

Meeting of Surgical Club—At the twenty-eighth semiannual meeting of the New Hampshire Surgical Club, Nashua, April 27, Dr Frederick W. Johnson, chief, gynecologic service, Carney Hospital, Dr Donald Munro and Dr Arthur W Allen, all of Boston, conducted a clinic at St Joseph's Hospital, in the afternoon Dr John P Bowler, Hanover, gave an address on "Three Causes of Urinary Frequency," and Dr Fred S Eveleth, Concord, "The Value of Cholecystography", Dr James B Woodman, Franklin, president of the New Hampshire Surgical Club, presided, there were about 125 persons present, many of whom took part in the discussions

NEW YORK

Miscellaneous Items—Dr Benjamin Kramer, Brooklyn, addressed the Buffalo Academy of Medicine, April 28, on "Newer Aspects of the Etiology and Treatment of Infantile Tetany"——A modern health center has been established in Elizabethtown in Essex County through the efforts of the local health officer, Dr Alexander Gersen, and various organizations——Practically every child in Granville under 12 years of age has been immunized against diphtheria, according to *Health News*——The Montgomery County Medical Society at its first meeting this year adopted plans for children's consultation clinics throughout the county, and instructed its committee to complete arrangements for the clinics in each community

Personal—Dr Melville D Dickinson, Troy, has been appointed a district state health officer in the state department of health——Dr Clara H Pierce has been appointed physician in charge of the bureau of child hygiene of the department of health of Syracuse——The gold medal of the New York Rotary Club was awarded, April 18, to Mother M Alfonsa Lathrop, founder of the Servants of Relief for Incurable Cancer at Hawthorne, N Y, and daughter of Nathaniel Hawthorne, the novelist, for "outstanding service to humanity during the last year——Dr David Warshaw, Albany has been appointed chief of clinic and adjunct attending surgeon surgical outpatient department, Mount Sinai Hospital

New York City

Society Creates Relief Fund—The Yorkville Medical Society at its last meeting of the executive officers created a hospital relief fund to aid needy members of the society; a loan of $5 000 through the efforts of Dr Charles N Gelber, who is chairman of the committee, was advanced to start the fund

Chiropodist Fined—Samuel Marder, said to be a chiropodist, 155 St Marks Place, Manhattan, was fined $100 in court in Jamaica recently, it is reported, on a charge of practicing medicine illegally Marder is said to have attended a person complaining of abdominal distress, and to have sent a bill for attending the patient for a sprained ankle

New Kind of Clinic—The James Buchanan Brady Foundation, New York Hospital, announces the establishment this week of a clinic for the nonsurgical treatment of tuberculosis of the urinary tract which will be, it is said, the first of its kind in the United States Clinics for adults will be held Tuesday and Friday afternoons, from 2 to 4, and for children, Saturday mornings from 9 to 10 The Finsen light, the alpine light and tuberculin injections will play an important part in the treatment Dr Stanley L Wang will be in charge of the new clinic under the direction of Dr Oswald S Lowsley, head of the Brady Foundation

Prizes for Manuscripts on Public Health—The Harmon Foundation offers through the *Survey* prizes of $250, $100 and $50 for the best unpublished manuscripts dealing with some experiment invention or achievement in the field of public health The subject must be presented so as to be interesting to lay readers in not less than 1,000 words nor more than 2 500 words and be typewritten, double-spaced and delivered not later than June 30 to "The Jury, Harmon-Survey Award 3 care of the *Survey*, 112 East Nineteenth Street, New York There must be a pen name on the manuscript, accompanied by a plain, sealed envelop having on the outside the pen name, and within both the pen name and the real name of the author Dr Haven Emerson is chairman of the jury

Tuberculosis Death Rate Reduced.—There were 5,471 deaths from tuberculosis in the city during 1925, which was 116 fewer than in 1924, of these, 4,775 were of the pulmonary type A chart published by the New York Tuberculosis and Health Association shows a comparatively high plateau for tuberculosis deaths from 1898 to 1918, there was a decided drop in 1909 another in 1920, and another in 1921, then a much smaller decline down to the present The number of deaths in the city from all forms of tuberculosis in 1907, for example, was 10,262, in 1918, 10,098, in 1898 9,265 Almost half of the deaths from pulmonary tuberculosis last year occurred in Manhattan, the oldest and most crowded part of the city The average death rate from pulmonary tuberculosis for the city as a whole was 81 per hundred thousand, for Manhattan, it was 113 per hundred thousand, an excess of 40 per cent The death rate in the borough of Brooklyn was 63 per hundred thousand, which was 5 per cent less than it was the year before There were 10,955 new cases of tuberculosis reported to the department of health in 1925, which, added to those already known, made a total of 27,172 in the city The registration rate in the city is now 562 per hundred thousand of population, ranging from 698 in Manhattan to 134 in Richmond

Society News—Dr. Michael Schuman has been elected president of the Riverside Medical Society, and Dr. Samuel Morse, secretary, Dr George D Stewart, who was guest of honor at the last bimonthly scientific meeting and dinner at the Hotel Majestic, delivered an address on "An Eye Witness in the Evolution of Surgery"——Dr Bernard Sachs addressed the stated meeting of the New York Academy of Medicine, May 6, on "The Mental and Moral Training of the Normal Child'——The Medical Society of the County of Queens and the Medical Association of the Greater City of New York jointly will visit, June 2, the Carnegie Institute of Washington, Department of Genetics, Cold Spring Harbor, Long Island, and, at the same time, the New York State Fish Hatcheries, and then will dine at Ward's Rest Inn at Center Port.——The Brooklyn Chamber of Commerce and the Medical Society of the County of Kings have approved the formation of a Brooklyn Health Council to coordinate all health agencies, to emphasize preventive medical work and properly to evaluate proposed medical agencies; at the organization meeting of the council, April 28, Mr. Matthew S. Sloan, president of the Brooklyn Edison Company, was elected president, and Dr. John E. Jennings, vice president.——Dr. Edward P. Kolb, superintendent, Suffolk County Tuberculosis Sanatorium, Holtsville, recently delivered a series of three lectures on tuberculosis before the Queens County Medical Society.

OHIO

Health at Cincinnati.—Telegraphic reports to the department of commerce from sixty-eight cities with a total population of about 29,000,000, for the week ending April 10, shows that the highest mortality rate (26.1) appeared for Cincinnati, and that the mortality rate for the group was 17.4. The mortality rate for Cincinnati for the corresponding week last year was 15, and for the group of cities as a whole, 14. There were twenty-four deaths from influenza in Cincinnati during the week of April 10.

Hospital for Wooster College.—An anonymous donor has given $75,000 to Wooster College, Wooster, for the construction of a three story hospital building on the campus, to provide hospital facilities for students who are ill, and to supervise better the general health of the student body. The hospital will be built on Beall Avenue and will be completed by June, 1927. A full-time physician and two nurses will be employed, and funds for the maintenance of the hospital have been provided.

Personal.—Dr. Mont R. Reid, Cincinnati, now temporarily on duty in Peking, China, has been selected to accompany y Chapman Andrews on an Asiatic expedition this sum- .——Dr. Louis H. Senteff has been appointed superin-dent of Mount Logan Sanatorium, Chillicothe, succeeding . James J. Chandler, resigned.——Col. Louis T. Hess, C., U. S. Army, addressed the reserve medical officers a luncheon at the Business Men's Club, Cincinnati, on Mobilization of Reserve Medical Corps for War.” Colonel Hess also visited various hospitals and the Medical College of the University of Cincinnati, and Fort Thomas, Ky., which is on the heights just across the river from Cincinnati.——Dr. Squire S. Beverly has been appointed health commissioner of the city of Toledo, to succeed Dr. Daniel W. Iford.——William H. Dittoe, a sanitary engineer for many years with the state department of health, has resigned to become chief engineer of the Mahoning Valley Sanitary District.——Dr. Horatio Z. Silver, Eaton, has been appointed county physician.——A jubilee was recently held in Cleveland in honor of Dr. Frank E. Bunts, who has been connected with Charity Hospital for about forty years.——Dr. Hermann M. Gunn, Philadelphia, has joined the staff of the New London clinic and hospital.

PENNSYLVANIA

Safety Conference.—The Pennsylvania department of labor and industry of the Commonwealth of Pennsylvania will hold a state-wide safety conference in the House of Representatives at Harrisburg May 28. The program, which has been arranged to stimulate discussion, announces that 247 persons were killed in Pennsylvania in 1925 on construction; 85 by cranes; 99 with electricity; 95 by falling objects and 58 in handling objects, and that 538 eyes were lost. There are 3,400 establishments in the state without any safety organization.

Governor Smith to Speak on State Hospitals.—Governor Alfred E. Smith of New York will address a mass meeting in Philadelphia at the Academy of Music, Monday evening, May 24, under the auspices of the Public Charities Association of Pennsylvania and the Pennsylvania Mental Hygiene Committee. The meeting will be in the interest of a $50,000,000 bond issue for a ten year building program for state hospitals for the insane, feebleminded and for correctional institutions. Governor Smith will give an account of work done in New York to improve the state hospitals. Senator Reed of Pittsburgh will preside at the meeting; the other speaker will be Dr. Horace P. Pike, director, clinical psychiatry, Danville State Hospital.

Society News.—Dr. Walter Timme, clinical professor of neurology, Columbia University College of Physicians and Surgeons, New York, delivered the Emmerling Memorial Lecture before the Pittsburgh Academy of Medicine, April 29, on “The Nature, Character and Treatment of Pituitary Migraine.”——Dr. Arthur C. Morgan, Philadelphia, addressed the Harrisburg Academy of Medicine, April 30, on “The Treatment of Acute Cardiac Tragedies.”——Dr. James J. Walsh, New York, gave the annual Campbell lecture of the Fayette County Medical Society, Uniontown, April 20, on “Funny Things That Have Cured People,” which is said to be a denunciation of medical quackery. The annual Campbell lecture of the Fayette County Medical Society was established in honor of Dr. Hugh Campbell, the first graduate physician to practice medicine in the county.——Dr. John D. McLean, Philadelphia, addressed the ninth annual Child Helping Conference for Schuylkill County, Pottsville, April 20, on “Hearts Damaged in Childhood.”

Philadelphia

Hospital News.—The president, managers and contributors to the Pennsylvania Hospital in West Philadelphia have issued invitations for May 26 to a celebration of the one hundred and seventy-fifth anniversary of the foundation of the hospital.

Endowment Subscribed.—May 1 marked the close of the first year of the fifteen year drive of the University of Pennsylvania for an endowment fund of $45,650,000, with the result that the subscriptions amounted to $7,500,000; subscriptions were received during the year from 10,868 persons, of whom 10,467 were former graduates or students.

Personal.—Dr. Samuel A. Lowenberg has been appointed visiting physician to the Philadelphia General Hospital and to the Northern Liberties Hospital.——Elmer V. McCollum, Ph.D., of Johns Hopkins University, Baltimore, addressed the Philadelphia Home Economics Association at Conwell Hall, April 15, on “Dietary Reforms.”——Dr. John Norman Henry has been nominated for a trusteeship in the University of Pennsylvania.

WEST VIRGINIA

State Medical Meeting.—The fifty-ninth annual meeting of the West Virginia State Medical Association will be at Morgantown, May 25-27; the association will be guests of the Monongalia County Medical Society. The council and the house of delegates will hold preliminary meetings, Monday, May 24, at the Hotel Morgan; the meetings of the association will be at the Elks Club. There will be a conference of secretaries of component societies, Tuesday noon, to discuss organization activities.

CUBA

Society for Study of Mental Diseases.—The Society of Psychiatry and Neurology of Havana, which was recently organized, has held its first meeting; other meetings will be held monthly. Dr. Armando de Cordoba was elected president of the society and Dr. Aristides Mestre, director of publications.

Milk Dispensary for Children.—Under the auspices of the Red Cross and financed by El Club Femenino de Cuba, a milk dispensary has been opened in Havana, which has about thirty children under its care. A pediatrician makes a complete physical examination of each patient and then prescribes a diet, which with the medical treatment is given to the children free. The mothers are trained in hygiene and other subjects related to health. It is the hope of the health authorities that, through the work done in this dispensary, other localities will establish similar institutions.

GENERAL

Award of Priestley Medal.—The American Chemical Society will award the second Priestley Medal to Dr. Edgar F. Smith, emeritus professor of chemistry, University of Pennsylvania, at the Philadelphia meeting of the society in the fall. The medal is bestowed every three years. The first Priestley medalist of chemistry was Ira Remsen, former president and professor of chemistry, Johns Hopkins University, Baltimore.

Found at Dallas.—Dr. Samuel Iglauer, Pearl Market Bank Building, Cincinnati, writes that he found a pair of glasses, with gray frame, in a gray, soft leather case, and that he is holding them for the owner.——A leather key holder containing six flat kays may be obtained from Association Headquarters, 535 North Dearborn Street, Chicago. Refer inquiries to “Lost and Found.”

American Board of Ophthalmic Examinations.—The next examination of the American Board of Ophthalmic Examinations will be held in Denver, September 13, just before the meeting of the Academy of Ophthalmology and Otolaryngology, which convenes in Colorado Springs, September 14. Further information can be obtained from the secretary of the board, Dr. William H. Wilder, 122 South Michigan Avenue, Chicago.

Fellowships in Neuropsychiatry.—The Graduate School of Medicine of the University of Pennsylvania, in cooperation with the Commonwealth Fund of New York, offers four fellowships in neuropsychiatry with especial reference to child guidance. These fellowships, which are at a stipend of from $2,000 to $2,600 per annum, begin, Oct. 11, 1926, and continue for a period of three years. Applications should be addressed immediately to Dr. George H. Meeker, Dean, Graduate School of Medicine, University of Pennsylvania, Philadelphia.

Annual Conference of Health Officers.—The annual conference of state and territorial health officers with the U. S. Public Health Service will be held in Washington, May 24-25. Representatives are expected from every state and territory. Among the subjects to be considered will be the status of sickness and morbidity reports and registration; the merits of a certification system in the sanitary control of shell-fish; the status of smallpox in the United States, and measures for its control. The conference will also discuss the distribution of ethyl gasoline, vaccination of dogs against rabies, and other phases of public health work.

Society News.—The fifth regular session of the International Association for the Promotion of Child Welfare will be held in Rome, May 25-29.——The annual meeting of the American Psychiatric Association will be held in New York, June 8-11, at the Waldorf-Astoria Hotel; final arrangements have been made for the entertainment of the visiting physicians and their wives and guests of the association.——At the annual meeting of the Association of American Physicians, Atlantic City, May 4-5, Dr. Charles F. Hoover, Cleveland, was elected president; Dr. Alfred S. Warthin, Ann Arbor, Mich., vice president; Dr. Francis W. Peabody, Boston, secretary, and Dr. Joseph A. Capps, Chicago, treasurer.

International Organization for Standardization.—The American Engineering Standards Committee called a conference in New York in April at which the national standardizing bodies in eighteen countries were officially represented. The conference drew up a proposed constitution for a new organization to be called the "International Standardization Association," whose object will be to arrange for international agreement on standardization by providing simple systematic means of interchanging information on standardization work; to develop general principles for the assistance of the national standardizing bodies, and to promote uniformity among the standards of the various national bodies. Members of the association are to be the central national standardizing bodies in the countries that accept this constitution. The executive body will be the "plenary assembly," composed of delegates of all the national standardizing bodies; an administrative council will control the finances and administrative matters but will have only advisory powers on important questions. Thus the basis of an international organization for industrial standardization has been made. The location of the seat of the new organization will be determined by the first plenary assembly. The conference recommended that the offices be established in London.

Supreme Court to Decide Pint in Ten Days Limit.—The right of the federal government to limit the quantity of alcoholic liquor a physician may prescribe within a given period is to be decided soon by the U. S. supreme court. The case, which was argued before the court, April 30, originated in a suit filed in 1922 in the U. S. district court of the southern district of New York by Dr. Samuel W. Lambert, with the approval of the Association for the Protection of Constitutional Rights, of which he was then president. Dr. Lambert sought an injunction to restrain the commissioner of internal revenue from enforcing those provisions of the National Prohibition Act limiting the quantity of liquor a physician may prescribe for one patient within a ten-day period. The district court granted the injunction. On appeal by the government, the circuit court of appeals for the second circuit reversed the lower court. Thereupon Dr. Lambert appealed to the U. S. supreme court. Because of the importance of the case, the American Medical Association and the general counsel for the Anti-Saloon League were allowed to file briefs as amici curiae. The closeness of the question is shown by the fact that the district court for the northern district of Ohio and the circuit court of appeals for the second circuit have decided in favor of the government, while the district court for the district of Montana and the district court for the southern district of New York have held that the limitations imposed by Congress exceed its power under the eighteen amendment.

Appointment of Fellows in Medicine.—The Medical Fellowship Board of the National Research Council appointed the following fellows in medicine, April 24:

Name	Field	Location
Dr. Harold A. Abramson, Libman Fellow, University of London	Physiology or medicine	A. V. Hill, London
Dr. Martin H. Dawson, University Clinic, Royal Victoria Hospital, Montreal	Medicine..........	Rufus Cole or F. W. Peabody, Harvard University
Dr. Arthur R. Elvidge, Cooper research scholar, McGill University	Physiology.........	Erlanger, Wiggers or Carlson
Dr. Peter Heinbecker, house surgeon, Presbyterian Hospital, New York	Physiology, surgery.	Gesell or Erlanger
Dr. Francis Heyroth, Seeley Fellow, University of Cincinnati	Biochemistry.......	E. J. Cohn, Harvard University
Dr. Charles G. Johnston, student assistant in surgery, Washington University	Biochemistry.......	H. B. Lewis, Michigan, or D. W. Wilson, Pa.
Dr. Florence M. Macdonald, assistant in pathology, Johns Hopkins University	Neuropathology, neuro-anatomy	Huber, Michigan, or Herrick, Chicago
Dr. Jacob Markowitz, demonstrator in physiology, Toronto	Physiology........	E. K. Marshall, or Erlanger and Gasser
Dr. Walter S. McClellan, resident physician, Bellevue Hospital, New York	Physiology........	Lusk, Cornell
Dr. Hobart A. Reimann, assistant resident physician, Rockefeller Institute, New York	Pathology.........	Anton Ghon, Prague
Dr. Ralph G. Smith, intern, Toronto General Hospital	Pharmacology......	Sollmann or Gasser
Dr. Maurice L. Tainter, instructor in pharmacology, Stanford University	Pharmacology	
Dr. Willard O. Thompson, research fellow in medicine, Harvard University	Biochemistry.......	L. J. Henderson, Harvard Univ.
Dr. Thomas E. Wood, instructor in medicine, University of Virginia	Physiology.........	Sir Thomas Lewis, London
Howard J. Shaughnessy, Ph.D., instructor in public health, Yale University	Bacteriology.......	Jordan, Chicago
William L. Straus, Ph.D., student at Johns Hopkins University	Anatomy	

CANADA

Personal.—Prof. C. L. Starr, University of Toronto Medical School, recently returned from Harvard University Medical School, Boston, where he assumed the chair of surgery for four weeks during the absence of Professor Cushing in Europe.——Dean Primrose, University of Toronto Medical School, has been awarded an honorary LL.D. by the University of Edinburgh.

Hospital News.—The Soldier's Memorial Hospital at Tillsonburg, Ont., which was made possible by the bequest of the late John Smith, was opened, March 22, by the minister of agriculture of Ontario in the presence of an audience which more than filled the building.——An addition to St. Joseph's Hospital, Winnipeg, will be started shortly, and, when completed, will make the total capacity 200 beds.

Society News.—The Canadian Society for the Study of Diseases of Children will hold its annual meeting at Gananoque, Ont., June 11-12, and all scientific meetings will be open to visitors. Further information may be obtained from the secretary-treasurer, Dr. Henry P. Wright, 40 Trafalgar Avenue, Montreal.——The fifteenth annual meeting of the Canadian Public Health Association, the twelfth annual meeting of the Ontario Health Officers' Association and the sixth annual meeting of the Canadian Social Hygiene Council were held at the University of Toronto, Toronto, May 5-7. There was a program of antenatal clinics, child hygiene clinics, nutrition clinics, demonstrations of public health nursing and milk and food control, and visits to the sewage disposal plants, the Connaught laboratories and other places; in addition to prominent Canadian health officials, George E. Vincent, president, Rockefeller Foundation; Dr. Haven Emerson, professor of public health administration, Columbia University, and Prof. Charles Edward A. Winslow, president, American Public Health Association, and professor of public health, Yale University, New Haven, Conn., addressed the convention.——At the twenty-eighth annual meeting of the

Vancouver Medical Association April 29, Archibald W. Hunter was elected president; Dr. Austin B. Schinbein, vice president; Dr. F. W. Brydone-Jack, secretary, and Dr. Walter S. Turnbull, treasurer.——Dr. Hibbert W. Hill, director, Vancouver General Hospital Laboratories, and professor and head of the department of bacteriology, University of British Columbia, addressed the Oregon State Health Officers' Convention, March 31, and the Oregon State Medical Association, April 1, at Portland, on "The Nonrelation of Malnutrition to Infection."

LATIN AMERICA

Training of Specialists in Hygiene in Uruguay.—The *Anales de la Facultad de Medicina*, Montevideo, gives the text of the recent law founding the Instituto de Higiene Experimental and providing for training of specialists in hygiene. The institute is to have four departments, bacteriology, parasitology, serums and vaccines, and the director is to be appointed by the medical faculty of the university, to serve five years.

Oil Company Opens Hospital.—The Venezuela Gulf Oil Company dedicated a new hospital at Bella-Vista, February 27. The hospital has a capacity of thirty beds and is completely equipped to meet the requirements of the company in this region. It will receive, however, employees of other oil companies and private patients also. The present staff comprises, among various other assistants, three American physicians and three American nurses. Dr. L. G. Chacin Itriago, chief of the National Health Service of Venezuela, was the principal speaker at the ceremonies.

Personal.—There are two physicians in the cabinet of Ecuador, namely, Dr. Isidro Ayora, professor of midwifery in the University of Quito, and Dr. A. Hidalgo Nevares, professor of physiology in the University of Guayaquil, who are respectively minister of public welfare and of public instruction.——Dr. G. Aráoz Alfaro has been made an officer of the French Légion d'honneur.——Dr. R. Finocchietto, Buenos Aires, has been delegated to study rehabilitation centers in other countries, as it is planned to open three at Buenos Aires to aid the crippled to become self-supporting.

FOREIGN

Vaccination Against Tuberculosis at Vienna.—The *Wiener klinische Wochenschrift* states that wholesale vaccination of school children against tuberculosis has been undertaken at Vienna. There have been no mishaps so far, but the reports have not yet been received from all the schools.

Graduate Course on Cancer.—Professor Gunsett writes to announce a course of laboratory and clinical study of cancer at Strasbourg, Oct. 8 to Nov. 6, 1926. Ten members of the faculty and visiting specialists will lecture, and Senator P. Strauss, former chief of the public health service, will preside. Dr. Gunsett is director of the regional cancer research center. The detailed program will be sent on request.

Prize for Research in Obstetrics.—The British Medical Association has received a gift of £1,000 from Dr. Katherine Harman, wife of the treasurer of the association, to establish a prize for research in problems incidental to child-bearing. Dr. Harman suggests that the prize be offered once in two years for the best work on any subject chosen by the council which comes within the definition of "disorders incident to maternity," or secondly, in recognition of important work already done on researches instituted that promise good results.

Personal.—The Ramaer medal, awarded for work that during the last five years has contributed most to the progress of neurology and psychiatry in the Netherlands, is to be conferred on Dr. A. de Kleijn, Utrecht, for his pioneer research on the physiology of the otolith apparatus, the static sense, tonic reflexes, etc.——Dr. J. Mijnlieff, Amsterdam, Keizergracht 134, is the secretary for the third International Congress on Rescue Work and First Aid, which meets at Amsterdam, Sept. 7-11, 1926.——Prof. W. Körte presided at the recent fiftieth anniversary celebration of the German Surgical Society; the city of Berlin presented 10,000 marks to the Körte foundation and a souvenir plaque.——The *Deutsche medizinische Wochenschrift* states that Dr. Fischer of the Pathology Institute at Copenhagen has been called to the Kaiser Wilhelm Institut fur experimentelle Therapie, Berlin, for a term of three years as a "scientific guest."——The *Presse médicale* mentions that Prof. F. de Lapersonne, Paris, has received a parchment address from the Mexican Ophthalmologic Society expressing gratitude for the devoted care lavished on Prof. R. Silva during the latter's long, grave illness in France last year.

Foreign Letters

LONDON

(From Our Regular Correspondent)

April 24, 1926.

Physician's Action Against a Hospital for Roentgen-Ray Injury

An unusual action has been heard at the eastern districts local division in the supreme court of South Africa. Dr. Bryne sued for $40,000 damages for a roentgen-ray burn of the left hand, which had left him to a large extent incapacitated for work. It was alleged that this injury was due to the neglect of the East London hospital board to provide proper apparatus with adequate safeguards, or in consequence of Dr. Hollis, then resident medical officer, who was in charge of that apparatus, not being an expert in roentgen-ray work. The injury was incurred during the course of an operation which the plaintiff was performing for the removal of a needle from the hand of a woman (who also sustained a burn). The defendants denied both that the apparatus was defective and that Dr. Hollis was inexpert in its use, and it maintained generally that, even if he were, the board was not legally responsible for his defects. The plaintiff could see the foreign body, but could not remove it. The body broke into three portions and he extracted only two pieces. When Dr. Hollis found that the plaintiff was failing to find the third portion of the needle, he asked to be allowed to attempt it, which he did. The operation lasted an hour and a half, and seven or eight exposures were given, using 10 milliamperes of current. A week later it was discovered that the plaintiff, the patient and the nurse, all of whom had been under the roentgen rays during the operation, had been seriously burned. The plaintiff relied on the breach of duty of the defendant board in failing to employ a person expert in the use of the roentgen-ray apparatus provided by the board. The defendant board admitted the duty to provide a resident medical officer, who, after due inquiry, might reasonably be deemed to be competent to manage such apparatus, and said that Dr. Hollis after due inquiry was reasonably deemed to be competent. It did not admit that Dr. Hollis was as a fact incompetent or that the plaintiff's injuries were due to inexpertness. The board denied that it was aware of any knowledge of inexpertness of Dr. Hollis, or that it was negligent in any way in appointing or employing him, and that even if Dr. Hollis was negligent or inexpert, and the board was negligent in employing him, the plaintiff was contributorily negligent and could not recover damages because: (*a*) the plaintiff, with full knowledge of the apparatus and of its effects, knowingly overexposed himself to the rays for an unduly long period; (*b*) he permitted Dr. Hollis to leave his duties as roentgen-ray operator and to act as the anesthetist, and for a prolonged period to explore for the portion of the needle; (*c*) he aggravated his injury by using his injured hand too soon after the burn and by employing unsuitable treatment. Sir T. Graham, the presiding judge, said that he was not satisfied that Dr. Hollis was a highly skilled radiologist, but he was convinced that at this date the defendant board had every reason to suppose that it had procured in him a competent and zealous radiologist. This being so, whatever action the plaintiff may have against Dr. Hollis, he must fail in his action against the defendant board. He gave judgment for the defendant with costs. Mr. Justice Pittman delivered a lengthy judgment concurring in the finding for defendant with costs, but basing his finding on his opinion that Dr. Hollis was competent at the time material, which, of course, removed from consideration the question as to whether the defendant board was negligent in engaging and employing him.

Statistics of Crime

The statistics of crime for England and Wales for 1924, just issued, contain much of medical interest. The figures of persons tried for indictable offenses are considered to be the best index to the annual fluctuations of crime. The number of persons tried for indictable offenses in 1924 was 57,374. In 1913, the last complete year before the outbreak of war, the number was 63,269, and the quinquennial averages for the preceding twenty years were successively 53,174, 53,833, 60,065 and 66,301. Measured by these figures, crime was increasing before the war, was less after peace, and now does not yet show a tendency to increase or decrease. With regard to murder, for the last fifty years, during which the population has increased from 24 millions to 39 millions, the number of murders in each year has remained almost stationary at about 150 cases per annum, of which for many years past about fifty have been murders of infants aged 1 year and under. In each of the last two years, 1923 and 1924, the total number of murders has been exactly 150, which is equivalent to 3.9 per million of the population. In 1924, fourteen persons were sentenced to death for murder, and in the cases of ten persons the sentences were executed. The figures of murders committed in England and Wales are not comparable with the figures for foreign countries because of differences in the definitions of murder. If, however, the total number of all homicides in certain countries is taken, approximately accurate comparisons can be made. In 1924 the number of homicides in England and Wales (including murder, manslaughter and infanticide) was 274, and the annual average for the five years from 1920 to 1924 was 268. The estimated total population of England and Wales in 1924 was 38,746,020. In the United States, in the registration area inhabited by 93,000,000 people out of the total of 110,000,000 population of the whole continental area of the United States, there were 7,788 homicides in 1922, of which 5,714 were committed with firearms. In Germany in 1921 there were 167 persons sentenced to death for murder; in Italy in 1918, with a population of 36,557,615, there were 1,983 homicides (including attempts) actually denounced to the courts (in England and Wales the corresponding figures for 1918 for such crimes known to the police were 267); and in France in 1913 there were 855 persons tried for homicide. In recent years there has been a slight increase in the figures of sexual crimes in England and Wales. The annual average of the total of this group during the five years 1919 to 1923 was 2,937; the actual total for 1923 was 3,030, and for 1924 it was 3,160. The increase was mainly in indecent assaults on young persons under 16.

Severe Sentence on a Physician for Supplying Morphine Contrary to Regulations

In a previous letter, a case was reported in which a physician was fined for supplying morphine contrary to regulations. In the following case the sentence was much more severe. A physician was summoned under the dangerous drugs act of 1920 for failing on three occasions to enter in a register kept for the sole purpose a certain quantity—50 grains—of morphine purchased by him. There was also a fourth summons for failing in a prescription for morphine to specify the address of the person for whom the prescription was given. He was seen by an inspector with reference to a woman, a drug addict, who had been convicted of forging a prescription. He was found to have been sending her morphine to Glasgow from London. He was informed that she was being treated by another physician, and said he would discontinue treating her. In December, 1925, the woman was again interviewed in Glasgow by a representative of the home office, and from information received, the inspector again went to see the physician. He told him he wanted to inspect his register. The physician said he did not keep a register, and he did not keep any stock of drugs or do any dispensing. If patients wanted any morphine he prescribed for them. That was not true. A day book showed that between January and December, 1925, the physician had prescribed 575 grains of morphine on thirteen occasions, and had seen the woman only six times. The pharmacist's register showed only the prescription made out in the name of the woman, but there were a number of "orders" signed by the physician and headed "For surgery use only," amounting in all to 850 grains. The magistrate said he would like to know whether the persons to whom the physician was alleged to have supplied morphine were drug addicts, or if they had come to any disaster as a result, and was informed that as far as one person was concerned this was so. It was stated by the police that the physician was a specialist in drug cases, and a large number of addicts known to the police were treated by him. The magistrate said that it was necessary in the interests of the public that, when a physician broke the rules and regulations as to the supply of dangerous drugs, he should be severely dealt with. He would sentence the defendant to two months' imprisonment in the second division on each of the first three summonses, and fine him $250 also on each of the three summonses, and a further $250 on the fourth summons, making in all six months' imprisonment and $1,000 fines. Notice of appeal was given.

A Surgeon's Hand

At a meeting of the Liverpool Medical Institution a remarkable and probably unique ceremony took place—the presentation to the institution of a bronze cast of the right hand of the surgeon F. T. Paul. In making the presentation, Mr. Frank Jeans said that the name of Paul was known to every surgeon in the civilized world and would be known 200 years hence—not only because he invented "Paul's tube" but also because he was responsible for much of the progress of surgery made in the past. This hand had been done in bronze from a plaster cast by H. Tyson Smith, the sculptor. It was a remarkable hand, the hand of a man who had worked. It was very like the hand of a cellist or a violinist because it was short and broad. The President called on Mr. Paul, who was present. He had been fond of using his hands from his earliest years, he said, as such use is the only way of training them in delicacy; at the same time, it must be remembered that a gentle touch came from the heart rather than from the hands—a touch inspired by a true sympathy with the patient's tissue.

BELGIUM

(From Our Regular Correspondent)

April 1, 1926.

The Cancer Problem and the Progress of Radium Therapy

Prof. C. Regaud recently gave before the Institut des hautes études in Brussels a series of lectures in which he gave a comprehensive account of radium therapy. The statement that dosage may be computed as the product of the intensity of the application and the time during which it is applied is not entirely accurate. A considerable quantity of radium, if allowed to remain for a few hours within the testis of a sheep, may produce an area of necrosis but only partial sterilization. On the other hand, a much smaller quantity of radium left for a sufficiently long period may produce complete sterilization without necrosis. The time element is of paramount importance. This must be taken account of in clinical therapeutics. The sensibility of tumors to ray therapy, unfortunately, diminishes with successive doses. An endeavor should be made to develop artificial radium sensibility; for example, through diathermy or through introduction into the tumor of substances of high atomic weight in the form of minute particles. There is a great future for the collaboration of chemotherapy and ray therapy. The author hopes for more general use of selective ray therapy in place of caustic ray therapy. All cutaneous epitheliomas yield solely to ray therapy and should no longer be operated on. In new cases, a cure can practically always be effected. Permanent cures are obtained in 50 per cent of cancers of the tongue, and 25 per cent of cancers of the buccal floor. Cancer of the pharynx gives 35 per cent of cures when ray therapy is applied. In cancer of the larynx, the prognosis is less favorable, because the cartilages, rich in lime salts, cause harmful secondary irradiation. Escat's plan of resecting the cartilages before undertaking irradiation looks as if it ought to give good results. Cancer of the esophagus does not give good results, owing to the thinness of the walls and the position of the mediastinum. In cancer of the cervix uteri, surgery and radium therapy are equally promising in favorable cases; but it looks as if the knife would be entirely replaced by radium before long. In inoperable cases, radium properly used gives from 15 to 25 per cent of cures extending over periods of five years or more. Although cancer of the breast is very sensitive to rays, the results are mediocre, because it proliferates early. In cancer of the digestive tract, with the exception of the rectum, progress is minimal, though noteworthy results may be hoped for.

Vaccination Against Smallpox

Addressing the Société médico-chirurgicale of Brabant recently, Dr. Lust proposed a resolution to be sent to the minister of public health demanding that the lower house should pass a law making vaccination and revaccination obligatory. Two neighboring countries, England and the German cantons of Switzerland, have experienced an extensive epidemic of smallpox as the result of the abolition of compulsory vaccination. A certificate of vaccination should be required of every foreigner wishing to reside in Belgium.

Surgical Treatment of Vertigo

Dr. Hautant emphasized recently the good results secured from surgical intervention in certain cases of vertigo; more particularly, neuralgia of the vestibule, an affection occurring in persons around 50 years of age, accompanied often by progressive loss of hearing. The intervention consists of a trephining operation on the labyrinth, its extent varying with the degree of conservation of the hearing. The operative results are excellent; mortality nil; no postoperative suppuration, and no involvement of the facial nerve. The feeling of dizziness disappears, and almost always the hearing improves.

Noncancerigenic Tar

Before the Société belge de biologie, Maisin, Rome and Jacquemin announced that they have discovered that tar produced in the Fisher rotary ovens at a low temperature (from 450 to 500 C.) is not cancerigenic. Various components of this tar (rosin, heavy oils and light oils) were also found to be noncancerigenic.

Medical Examination and License to Wed

In an address before the Société belge d'hygiène, Professor Brachet expressed himself in favor of medical examination of candidates to wed. He does not, however, deny that there are difficulties to be overcome before compulsory examination can become a reality. He pointed out the abyss that separates genetics, or the science of animal and vegetable crossings, from eugenics, the science of human crossings.

Every person living is the result of a multitude of crossings. There does not exist in man any such thing as pure lineage, which is in experimental genetics the first and fundamental condition demanded. The object of eugenics is to develop in the offspring the most useful qualities that man can possess. Many marriages take place which, from the eugenic standpoint, ought never to be consummated; for example, between members of two families that betray marked like defects, though they may give evidence of possessing at the same time very desirable talents, which might result in the birth of a genius. The question, therefore, arises, Is it better for the state to put obstacles in the way of the consummation of a union from which a genius might be born or to run the risk of expending thousands of dollars for the hospitalization of the defective offspring of defective parents?

The trend of the arguments places the whole question on this basis: It does not seem advisable to prevent unsuitable marriages by law, but it would seem well to launch an intensive publicity campaign in which sound logic and good example are the rallying notes. It might be feasible to establish a free service where candidates for marriage could receive prenuptial medical advice, as has been recommended by M. Govaerts.

GENEVA

(From Our Regular Correspondent)

April 20, 1926.

Title of Specialist

Following a recent decision, the title of specialist cannot be used in Hungary until a physician has devoted himself to special study for a given length of time. Physicians who illegally call themselves specialists are subject to a fine. In Germany also the diet has decided that the title of specialist can be granted only by a commission of seven members designated by the council of the medical chamber.

Death of Dr. Maygries

Widespread regret has followed the announcement of the death of Dr. Maygries, agrégé professor of the Paris Faculty and obstetrician to the hospitals of Paris. Overtaken by poverty-stricken old age, this eminent practitioner sought refuge in an establishment of the public charities, where he died. He had delivered 10,000 French children during his long career.

Imagination in Therapeutics

Dr. Gustave Monod of Vichy recently delivered a lecture to the Medical Society of Geneva, entitled "Imagination in Therapeutics; Cagliostro to Coué." Cagliostro, Gruty and Coué, by different methods, having an identical mechanism, effected cures of psychasthenics. These three healers obtained success in foreign lands, never in their own; Cagliostro and Gruty in France, Coué in England and the United States. In Italy, Coué was a complete failure. The medical profession should never despise a therapeutic procedure. Coué has shown that an estimate of the suggestibility of every patient should be made. One patient needs authority, another needs persuasion, and all need sympathy. We are not to imitate the procedures of Coué and other healers, but their effectiveness resides in the fact that they are always themselves. In the development of our personalities, Monod sees the possibility of becoming the best of healers.

International Medical Union

The Central Committee of the Federation of Swiss Physicians has ratified its adhesion to the International Medical Union and will be represented in that body by its president, Dr. Fingerhuth. The union is intended to be a center of information whose permanent agent is to be a general secretary. The council of the union will be composed of two members and a correspondent for each nation belonging to the union. As an example of the work of the union, let us suppose that Finland wants to know how a given medicosocial question has been settled by the medical profession of Switzerland and Italy. Finland's correspondent writes to the general secretary, and the latter transmits his questions to Switzerland and Italy. Copies of the replies are kept by the secretariat, so that little by little its archives will become an international library concerning the practice of medicine.

Importance of Acne

Prof. Charles Du Bois of Geneva has recently called attention to the fact that acne in young persons should be carefully treated because it disfigures adolescents for years and, by leaving cicatrices in adults, may become the starting points of epithelial growths in later life. Prophylaxis requires minute cutaneous hygiene and regular removal of comedones by means of Unna's instrument or pressure with the fingers, care being taken to avoid making any excoriation liable to become infected. Before and after these manipulations, the skin is to be impregnated with a fat dissolving solution, the following being Du Bois' choice: benzine, purified petroleum benzin and xylene, equal parts. This solution causes swelling and irritation of the skin, which is always temporary and without danger.

Arsenic on Apples

On account of the recent legal proceedings in England relating to American apples bearing arsenic, it is likely that a law controlling its use in fruit growing will be submitted to the Swiss federal council for action.

Gastro-Intestinal Hemorrhage of the New-Born

Dr. Salavert records three cases of nurslings who developed melena and hematemesis a few hours after birth. Other methods of treatment have been outclassed by transfusion. Citrated blood, as used by Lewisohn in 1914, was perfected by Helmholz in 1915, the transfusion being made in the superior longitudinal sinus. Statistics show that the hemorrhage was controlled in 96 per cent of the cases, with 89 per cent recoveries, even in the most desperate cases. It is preferable to determine the blood group of the donor and infant, yet no time is to be lost with this examination because several hundred transfusions have shown that the mother's blood can almost always be transfused with impunity.

ITALY

(From Our Regular Correspondent)

March 15, 1926.

The Leonardo Bianchi Foundation

In recognition of the work of Prof. Leonardo Bianchi, senator, as instructor in neurology and psychiatry, a fund has been collected with which to establish at the University of Naples a biennial Bianchi prize, to be awarded to the medical graduate who submits the best work on neuropsychology.

The Crusade Against Malaria

The municipality of Rome and the Rockefeller Foundation will cooperate in creating in Rome an institute for the study of malaria in Italy, and particularly in the Agro Romano. The institute will be housed in the Palazzo della Farnesina, and will comprise a department for biologic study, an exhibit of sanitary engineering, a library with modern literature on malaria, and a propaganda department for the demonstration of various systems and installations employed in the crusade against malaria. The governor of Rome has arranged with lessees and owners of land in the Agro Romano to undertake the permanent elimination of stagnant pools. Reservoirs of water must be rendered harmless, bunkhouses of agricultural laborers must be whitewashed, and mosquitoes and other insects which breed must be destroyed. Proprietors and managers of country estates must report all cases of malaria, whereupon the governor of Rome will provide the needed treatment free of charge.

Italian League for the Prevention of Nervous and Mental Disease

The *Lega italiana per la prevenzione delle malattie nervose e mentali* has been founded in Rome. Its purpose is analogous to that of similar leagues already established in the larger countries of Europe and America. Honorary chairmen are Prof. Leonardo Bianchi, senator, and Professors Morselli and Tanzi, active chairmen are: Professors Ettore Levi, Ferrari and Medea. The following chapters have already been organized and have begun work. Lombardy (Prof. Medea), Piedmont (Prof. Lugaro), Liguria (Prof. Vidoni), Emilia (Prof. Ferrari), Marches (Prof. Modena), and Abruzzi (Prof. Del Greco). At Rome, a Latium chapter has been established which is housed in the Istituto italiano di igiene e previdenza sociale, under the chairmanship of Prof. De Santis of the University of Rome.

The Death of General Lorenzo Bonomo

The death is announced in Bari, his native city, at the age of 69, of Prof. Lorenzo Bonomo, general in the reserves of the army medical corps. Bonomo had held for ten years the chair of war surgery and operative medicine in the Scuola di sanità militare and had been successively director of various hospitals in time of peace. During the war, he was sanitary director of the army medical corps and later of the third army corps, a post which brought him promotion to the rank of general. He was consultant and chairman of the international sanitary commission, instructor in the Università castrense di S. Giorgio di Nogaro, was appointed chief inspector of the Sanità militare italiana, and was the last person to hold that post, it being now abolished. At his request, he was given a position with the reserves, and was then again called into active service in the ministry of finance, being appointed chairman of the Commissione superiore di visite in connection with the administration of war pensions.

Scientific Lectures at the Scuola di Sanità Militare

In the Scuola di sanità militare, a series of lectures on live topics will be given during the current year, by professors of the various Italian universities. Two lectures have already been given.

The Superabundance of Physicians

Italy has rather an overabundance of physicians. During the war and the years immediately following, the annual number of graduates in medicine and surgery was much greater than during the preceding period, so that now, in the urban centers, there are about 800 inhabitants to one physician.

A New Course in Legal Medicine

At the University of Naples a new course in legal medicine dealing with work in prisons has been organized. Professor De Crecchio, director of the Manicomio Giudiziario in Naples, will have charge of the course. In his introductory lecture, Professor De Crecchio emphasized the need of far-reaching reforms in punitive law. The speaker brought out that the old conception of the prison physician's duties was no longer tenable, and that he must now take his part in corrective work. Professor De Crecchio accentuated the importance to the prison medical specialist of traumatology, aphrodisiology and toxicology. He stated that the prison constituted a veritable psychopathologic clinic, rich in material bearing on the administration of justice and the complex personality of the criminal.

BERLIN

(From Our Regular Correspondent)

April 3, 1926.

Official Consultation Centers on Marriage

In a decree dated February 19, the Prussian minister of public welfare recommended the creation of marriage consultation centers (*Ehebcratungsstellen*). The purpose of these centers will be to determine by medical examination whether the health of applicants justifies marriage. The results of examinations will be recorded in a marriage testimonial (*Heiratszeugnis*). The present decree does not propose to make the medical examination compulsory, nor are there any medical restrictions on marriage or any requirement that certificates of health shall be exchanged between the parties to the contract. The consultation centers will serve to establish suitability for marriage and to give advice on medical matters pertaining to marriage but not on other questions bearing on sexual relations. Professional secrecy is imposed on the examiners. The examination will be conducted according to the rules proposed by Hirsch to the Prussian Health Council. The form for the marriage testimonial was also prepared by Hirsch. It comprises the following four questions: 1. What objections, if any, are there to the marriage of the examinee? 2. What dangers, if any, are presented for the other party to the contract? 3. What dangers, if any, would eventual offspring incur from the marriage? 4. What defects, if any, does the other party to the contract present that appear to constitute an objection to the marriage? Hirsch emphasized the dangers of child bearing for women of inferior constitution, and pointed out the dangers from venereal diseases, especially for women. He explained also the risks that posterity incurred. The marriage testimonial requires also replies to the following two quesions: 1. On the basis of the findings made, are there any serious objections to the applicant entering into the marriage relation? 2. Should the applicant postpone his (or her) marriage, and, if so, for how long? It is left to the discretion of the applicants to take whatever course they choose after the contents of the marriage testimonials become known to them. Hirsch discussed the question of whether the marriage testimonials should be made out by the *"Amtsarzt,"* by a special adviser (which would require the creation of a new office), or by general practitioners. The decree recommends the appointment, as special advisers, of physicians who are mature, experienced and possessed of broad scientific knowledge. Hirsch thinks that the decision as to the suitability of applicants for marriage licenses should be left to general practitioners. He is fully aware that, at present, the average physician does not possess the adequate knowledge for the task, and repeats his former demands that in the university medical course the theories regarding propagation, the physiology, pathology and sociology of marriage, and the clinical problems of heredity be taught in the medical clinics.

The Operation of the New Law Pertaining to the Care of Cripples

During the years from 1920 to 1924, the Prussian welfare leagues, exclusive of Schleswig-Holstein and Nassau, have turned over 18,600 cripples to institutional care. On the basis of the census of 1906, which gave as 29,000 the number of cripples in Prussia in need of homes, nearly two thirds of that number had been provided for, although Prussia's new law pertaining to the care of cripples has been in operation only five years. To be sure, the undernutrition of the war and postwar periods has produced a large number of new cripples. Up to 1925, the provinces of Prussia expended 6,500,000 marks in the application of the law. According to the law, the task of preventing crippling is part of the public welfare work. The Rhine Province has appropriated 100,000 marks for purposes of prophylaxis. This sum is to be used for the creation of orthopedic courses in gymnastics; for combating rickets, and, finally, for the industrial education of cripples. There is still a dearth of trained orthopedic physicians. Until the universities can supply this need, several communities should combine and employ a specially trained physician.

JAPAN

(From Our Regular Correspondent)

April 6, 1926.

The Cause of Rabies

Dr. K. Sukegawa, after seven years of research, has cultivated the micro-organism that causes rabies. He believes that the Negri bodies are not the cause of this disease. In his first trial of infecting rabbits with this virus, fifty-eight days passed before rabies appeared in them and the symptoms of the disease were imperfect. At present, in the twelfth generation, the disease appears in twelve days.

The Imperial Academy Prizes

In the general meeting of the Imperial Academy, the prize winners for the year 1925 were selected. The imperial prize was conferred on a geologist, aged 26. The academy prize was awarded to Prof. Dr. Seizo Fujinuma of the Medical College of Aichi University, whose work was "The Histologic Study of Oxydase." He is said to have pursued his researches for more than ten years, meanwhile making a clinical study of the pathologic changes involved. His published reports amount to twenty-four, of which the last gives authority to the theory of oxidation in the tissue cells. The imperial wedding commemoration prize of the Osaka *Mainichi-Shimbun* (Daily News) was given to Prof. Dr. C. Ogata and Prof. Dr. J. Shimazona of the Medical College of the Tokyo Imperial University, who worked on the same subject, "The Experimental Study of Lack of Vitamin B." Both came to the conclusion that when man and other animals suffer from this disease, the lack of proper nourishment, the loss of weight, the impoverishment of blood, etc., are evident, but in the heart and veins no change such as often found in beriberi is to be seen.

The Insane and Asylums

Dr. Naoki Sugita informs us that Japanese are taken with mental diseases in the spring and summer more than in the other seasons. In the suburbs of Tokyo is a hospital for the insane with 700 beds, while the Osaka prefecture is now building one that will admit 300 patients. There are fourteen additional public and forty-one private asylums in Japan proper, besides many hospitals, public or private, with clinics for mental diseases.

Union Hospital

April 27, a meeting was held in Tokyo to establish a union hospital in the suburbs of Tokyo. The hospital will make it unnecessary for practitioners, able and experienced but without hospitals of their own, to send their patients to bigger hospitals. Also, their patients need not undergo the inconvenience and expense of changing physicians.

Physical Education

The authorities have decided that in the next budget year they will establish a physical culture staff consisting of forty-seven officials of so-nin rank and ninety-seven officials of han-nin rank, who shall be posted in every prefecture throughout Japan. The educational department has also established a research institute of physical education. The main building and fine gymnasium of the institute has just been completed in the suburbs of Tokyo. There is to follow a track 330 meters long, tennis courts and a swimming pool, the whole site and compounds covering about 40,000 square meters and being surrounded with beautiful woods and small valleys. The institute is intended to conduct research on physical education. The institute has much to perform in the future in giving courses of lectures and training, coaching athletes and publishing books.

Increase of Physicians

According to figures published by the department of home affairs of Japan, the number of physicians in this country in 1925 was 43,702, including 1,271 new medical graduates. Although for the last ten years there has been a decrease of 937 practitioners, the number of new graduates increases by about 350 more year by year. Dr. Sakuzo Ujihara in the department of home affairs is of the opinion that the greater the number of practitioners, the higher the medical fees; for each practitioner is apt to distribute the cost of his own maintenance among his patients. The increase of our population being about 700,000 a year, he argues that we must limit the number of new physicians to 500 at most. His private opinion is that the department of home affairs should license only those who pass the government examination. Dr. Nishimine argues that, though the department of education must regulate the number of medical graduates, our country is still in need of more and better practitioners in order to maintain our national health.

Periodicity of Conception

According to Dr. Kochu Narumi of the Kiuchi Institute, the periodicity of conception of 1,000 Japanese women can be classified into five types: (1) two year type (the period between conceptions is quite regular—from a year and a month to two years); (2) three-year type (from two years and a month to three years); (3) four-year type (from three years and a month to four years); (4) five-year type (from four years and a month to five and more than five years); (5) unusual types. The average period of all except those of the unusual types is just two years, three months and eighteen days. In a woman of the standard three-year type, intervals of conception maintain the same periodicity irrespective of her increasing age. The women of two-year and four-year types also repeat their conceptions regularly.

The Central Antituberculosis Society

The twelfth general joint meeting of the local antituberculosis societies in Japan, held at Nagano this month, has decided that a central association shall be organized with the name of the Japan Central Antituberculosis Society in order that it may formally send representatives to the international antituberculosis association, to be held in Los Angeles next autumn. The newly organized society is to consist of all members of every public or private society in Japan which is interested in tuberculosis.

Abolition of "Patent Medicine" Tax

Readjustment of taxation being the main policy of the present Japanese cabinet, Mr. Hamaguchi, minister of finance, proposed that the "patent medicine" tax laws should be abolished. His argument was that such laws imposed a tax on the poor, who would sooner take "patent medicines" than consult physicians. In spite of the strong opposition of the medical profession, the bill for abolition of these taxes passed the last session of the imperial diet.

Marriages

Hanns Bernhard Mueller, Ann Arbor, Mich., to Miss Henny R. Cramer of Lincoln, April 18.

John Vincent Lambert to Miss Margaret May Carroll, both of Chicago, May 1.

Albert L. Schneider, Brady, Neb., to Miss Flora Crane of Denver, recently.

Deaths

Arthur Righton Dray, Beirut, Syria; Medico-Chirurgical College of Philadelphia, 1905; also a dentist; professor of oral surgery, operative dentistry, and director of the school of dentistry, American University of Beirut; formerly a practitioner in Philadelphia; aged 53; was killed, March 4, by an insane servant.

James H. Seyler, Preemption, Ill.; Western Reserve University School of Medicine, Cleveland, 1867; University of Pennsylvania School of Medicine, Philadelphia, 1868; also a druggist; for twenty-five years postmaster; aged 83; died, April 25, of senility.

Charles Louis Chasins ⊕ New York; Cornell University Medical College, New York, 1902; specialized in otology, laryngology and rhinology; on the staff of the Community Hospital; aged 46; died, April 29, of coronary thrombosis.

Thomas Martin Darwin, Cooper, Texas; Medical Department of the Tulane University of Louisiana, New Orleans, 1902; member of the State Medical Association of Texas; served during the World War; aged 47; died, March 30.

Theodore Clement Wood, Haverstraw, N. Y.; Medical Department of the University of the City of New York, 1879; member of the Medical Society of the State of New York; aged 72; died in January, of dilatation of the heart.

Elmer E. Vaughan ⊕ Chicago; Hahnemann Medical College and Hospital, Chicago, 1889; formerly professor of surgery at his alma mater; aged 60; died, April 30, of splenomyelogenous leukemia.

James Dennistoun Jones, Basswood, Manitoba, Canada; M.R.C.S., England, 1914; L.R.C.P., London, 1914; M.B., B.Ch., University of Cambridge, 1918; aged 38; died, January 20, at Dauphin, of heart disease.

John L. Harris, Webster, S. D.; Hahnemann Medical College and Hospital, Chicago, 1875; Medical Department of the University of Illinois, Chicago, 1891; aged 77; died, April 16, of heart disease.

Le Baron Wilmot Jones, Pleasantville, N. Y.; Bellevue Hospital Medical College, New York, 1892; on the staff of the Ossining (N. Y.) Hospital; aged 55; died, April 28, following a long illness.

George T. Hagen, Johnson City, N. Y.; Syracuse University College of Medicine, 1923; served during the World War; aged 26; died, April 4, at the Johnson City General Hospital, of pneumonia.

Henry Clinton Peninger, Lacamp, La.; Memphis Hospital Medical College, 1901; member of the Louisiana State Medical Society; aged 49; died recently, at Glenmora, of chronic interstitial nephritis.

Mars W. Carpenter, Cleveland; Western Reserve University School of Medicine, Cleveland, 1902; member of the Ohio State Medical Association; aged 58; died, February 17, of cerebral hemorrhage.

Alton J. Turney, Crutchfield, Ky.; Vanderbilt University Medical Department, Nashville, Tenn., 1891; member of the Kentucky State Medical Association; aged 57; died, April 13, of heart disease.

Charles N. Powell, Deweyville, Texas; St. Louis College of Physicians and Surgeons, 1893; member of the State Medical Association of Texas; aged 57; died, February 18, of pneumonia.

Henry Wallwin, Barrie, Ont., Canada; University of Toronto Faculty of Medicine, Toronto, 1889; formerly member and chairman of the board of education; aged 66; died, March 1.

Millard F. Stults ⊕ Wiota, Iowa; College of Physicians and Surgeons, Keokuk, 1878; secretary of the Cass County Medical Society; aged 69; died suddenly, April 16, of heart disease.

Ernest Raymond Schilling, Glen Cove, N. Y.; Albany Medical College, 1915; member of the Medical Society of the State of New York; aged 36; died, April 24, of pneumonia.

Harry Coleman Dunlavy, Shelby, Iowa; Northwestern University Medical School, Chicago, 1917; aged 32; died, April 19, at a hospital in Blair, Neb., of injuries received in an accident.

John James Mudd, Hardyville, Ky.; University of Louisville School of Medicine, 1876; Jefferson Medical College of Philadelphia, 1890; aged 80; died, April 12, of senility.

Wilbur G. Melaas ⊕ Beloit, Wis.; Rush Medical College, Chicago, 1905; aged 42; died, April 17, at the Emergency Hospital, of shock and hemorrhage following a cholecystectomy.

Eli Stillman Bailey, Chicago; Hahnemann Medical College and Hospital, Chicago, 1878; aged 74; died, April 26, at the Hinsdale (Ill.) Sanitarium, of cerebral hemorrhage.

William D. Matney, Greenville, Ill. (licensed, Illinois, 1878); Civil War veteran; aged 85; died, April 9, at the Soldiers' and Sailors' Home, Quincy, of paralysis.

Jonathan J. Evans, Friend, Neb.; Eclectic Medical Institute, Cincinnati, 1880; Columbus Medical College, 1883; aged 71; died, April 5, of cerebral hemorrhage.

Marion Thrasher, San Francisco; University of California Medical School, San Francisco, 1890; aged 83; died, April 4, at Palo Alto, Calif., following a long illness.

Maurice Enright, Brooklyn; Medical Department of Columbia College, New York, 1885; aged 53; died, April 8, of bronchopneumonia and chronic endocarditis.

James M. Grant, Petersburg, Ky.; Medical College of Ohio, Cincinnati, 1873; Jefferson Medical College of Philadelphia, 1875; aged 73; died, March 24, of paralysis.

Clarence P. Battles, Hot Springs National Park, Ark.; Rush Medical College, Chicago, 1879; formerly a druggist; aged 72; died, March 31, at Girard, Pa.

Michael Charles Golden, Taunton, Mass.; University of Vermont College of Medicine, Burlington, 1881; aged 71; died, April 13, of cerebral hemorrhage.

John W. Forrest, Lynnville, Ky.; University of Tennessee College of Medicine, Memphis, 1900; aged 72; died, January 14, of chronic nephritis.

Robert Simpson Paxton, College Corner, Ohio; Miami Medical College, Cincinnati, 1882; aged 73; died, April 17, of angina pectoris.

John R. Woltz, Dobson, N. C.; Medical College of Virginia, Richmond, 1867; Civil War veteran; aged 85; died, April 10, of senility.

John W. Coy, Bolivar, Mo.; St. Louis College of Physicians and Surgeons, 1893; aged 56; died, April 6, of bronchopneumonia.

Fred Henry Fearl, Orange, Mass.; University of Vermont College of Medicine, Burlington, 1890; aged 62; died, March 24.

Thomas Henry Morgan ⊕ New York; Trinity Medical College, Toronto, Ont., Canada, 1897; aged 57; died, April 9, of uremia.

Mary M. Huntley, Olympia, Wash.; University of Buffalo Department of Medicine, 1896; aged 64; died, March 3, at Puget.

John Donald Proctor ⊕ Keene, N. H.; Tufts College Medical School, Boston, 1897; aged 57; died, April 8, of pemphigus.

Frederick E. Fooks, Baltimore; Washington University School of Medicine, Baltimore, 1873; aged 77; died, March 25.

Alvin A. Williamson, Marshall, Ind.; Medical College of Indiana, Indianapolis, 1898; died, April 5, of heart disease.

Charles H. Boaz, Mattoon, Ill.; Chicago Homeopathic Medical College, 1890; aged 72; died, April 24, of angina pectoris.

Edward W. Toole ⊕ Selingsgrove, Pa.; College of Physicians and Surgeons, Baltimore, 1881; aged 74; died, March 13.

James Wallace Smuck, Toronto, Ont., Canada; Victoria University Medical Department, Toronto, 1892; died, March 6.

Lewis Cass Landon, Indianapolis (licensed, Indiana, 1897); Civil War veteran; aged 84; died, April 16, of heart disease.

William H. Lewis, Mount Carmel, Pa.; Jefferson Medical College of Philadelphia, 1888; aged 65; died in March.

Miles Cabel McKee, Fox Creek, Ky.; University of Louisville School of Medicine, 1918; aged 43; died, April 20.

Joseph Mayo Harris, Sedalia, Mo.; Meharry Medical College, 1893; aged 67; died, March 29, of heart disease.

Everett Morton Evans ⊕ Mecca, Ind.; Pulte Medical College, Cincinnati, 1895; aged 61; died, February 20.

Antonio Capozzi, New York; University of Naples, Italy, 1886; aged 64; died, April 9, of lobar pneumonia.

Samuel J. Lisman, Oaktown, Ind.; Medical College of Ohio, Cincinnati, 1872; aged 84; died, February 20.

J. C. Hurst, Saxon, W. Va. (licensed, West Virginia, under the Act of 1881); died, March 19.

J. C. Wilhite, Sardis, Tenn. (licensed, Tennessee, 1908); died, April 1, of heart disease.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

PROPRIETARY MIXTURES SYNDICATE

Another Medical Fraud Debarred from the Mails

Kansas City, Missouri, which until recently, at least, has had the unenviable distinction of harboring some of the worst medical mail-order frauds in the country, is, or possibly we should say was, the home of the Proprietary Mixtures Syndicate, Inc., and Yonga Yoga Scientist, Inc., two imposingly named *pieces* of quackery operated by one Thomas W. Douglas and his wife Maye. Douglas' scheme was to sell through the mails a number of "patent medicines" which Douglas called "Formulations." His method of diagnosis was to require the birth date and from this he pretended to be able to determine what ailed the victim, and the evidence showed that he usually extracted about $100 from each person that "bit" on his scheme.

On March 13, 1926, Douglas was called on to show cause by April 9 why a fraud order should not be issued against him and his fake concern. He appeared on that date with his attorney, Austin F. Canfield of Washington, D. C. On April 17, 1926, a fraud order was issued against Proprietary Mixtures Syndicate, Inc., Mrs. M. Douglas, Thomas Douglas and Yonga Yoga Scientist, Inc.

The memorandum to the Postmaster General of Judge Horace J. Donnelly, Solicitor of the Post Office Department, gives in detail the government's case against these quacks. We quote in part from the memorandum:

"Mr. Thomas W. Douglas and wife, Maye Douglas, are engaged in the business of selling through the mails certain medicinal preparations called 'Formulations,' which, it is claimed, will cure remitters of practically every disease and ailment known to humanity, including cancer, tuberculosis, Bright's disease, stomach, liver and kidney 'troubles,' genito-urinary ailments, and even blindness in some instances. All the information Douglas and his wife claim is really necessary for treating a prospective patient through the mails is the date of birth."

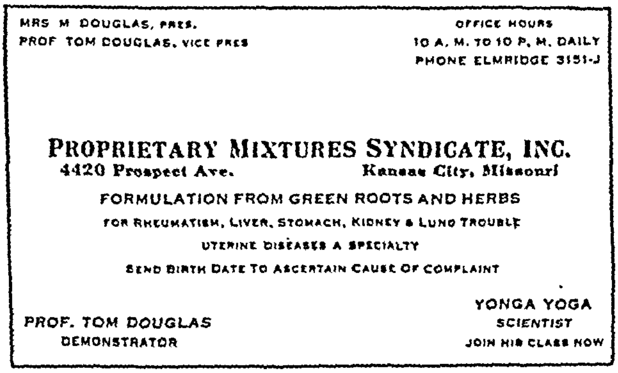
The memorandum continues:

"The evidence shows that Mrs. Douglas has no medical training whatever, but Mr. Douglas claims he studied certain branches of medicine in this country and abroad, and that he made it a practice to pick herbs of various kinds since he was a boy. He was rather hazy as to the particular studies he pursued in several universities he mentioned. He claimed he paid for his instruction, but admitted he was not enrolled in any medical institution. He admitted that he does not reach his conclusions from a medical standpoint, but makes his alleged diagnoses astrologically or by 'rule.' He testified, however, that he does not need to know the exact moment and place of birth, but claimed that all the information he needs to determine what diseases or ailments individuals are suffering from is to have simply the date of their birth.

"According to the evidence Douglas employs no physician, pharmacist or chemist, all the work being done by himself and wife at their home. Sometimes they have a temporary employee. The medicines are put up in part by Parke, Davis & Company, and Douglas informed the inspector that Charles H. Hunter, then in Africa, doing 'root and herb' work, mixes 'different strengths' of the medicines used. Douglas stated he had quite a stock of medicines on hand already mixed, sufficient to last until Hunter returned. Douglas calls his medicines 'Formulations,' and informed the inspector that he has from 1 to 46,000 'numbers,' representing 'different elements of strength.' At the hearing he was either unable or unwilling to state the cost to him of his several medicines or 'Formulations.' He stated the 'Formulations' were secrets, and that he charged patients from $35.00 up for the diagnosis and treatments. The evidence shows that some persons were induced to pay him sums of several hundred dollars. I find from the evidence that the favorite method being practiced by Douglas on credulous persons is to get them to purchase the regular treatment and then to have them purchase a further supply to keep them from 'going back,' or, as he also says, to keep them from becoming 'stagnated.' Douglas informed the inspector that the claims made for the medicines are based on so-called testimonials from laymen.

"Mr. Douglas was asked at the hearing to state the basis used by him in determining from what diseases or ailments a particular person suffered. He replied that the individual's birthdate enabled him to say which of the signs of the Zodiac the individual came under, whether within the 'division of earth, air, fire or water,' and that by means of certain mathematical calculations which he claims to make he could tell just what disease or ailment the individual had. He admitted he might make occasional mistakes. He alleged that while persons born under the same sign of the Zodiac are 'predisposed' to the same diseases and ailments, yet they don't all have the same trouble, but that he is able, with nothing else at hand concerning the individual except the birthdate, to differentiate between the various ailments in the most minute detail. He admitted that persons born under a certain sign of the Zodiac might have the same disease as persons born under any other sign, but that this also made no difference so far as his ability to diagnose the case is concerned."

"Concerning his method of diagnosing, Mr. Douglas was either unwilling or wholly incapable of explaining it, but claimed he used secret methods. He sought in every way to becloud the issue, regardless of questions asked him in an effort to bring out the facts. He claimed that he and Mrs. Douglas were the only ones who knew the secret.



MRS M DOUGLAS, PRES.
PROF TOM DOUGLAS, VICE PRES

OFFICE HOURS
10 A. M. TO 10 P. M. DAILY
PHONE ELMRIDGE 3151-J

PROPRIETARY MIXTURES SYNDICATE, INC.
4420 Prospect Ave. Kansas City, Missouri

FORMULATION FROM GREEN ROOTS AND HERBS
FOR RHEUMATISM, LIVER, STOMACH, KIDNEY & LUNG TROUBLE
UTERINE DISEASES A SPECIALTY
SEND BIRTH DATE TO ASCERTAIN CAUSE OF COMPLAINT

PROF. TOM DOUGLAS
DEMONSTRATOR

YONGA YOGA
SCIENTIST
JOIN HIS CLASS NOW

"I am convinced from the evidence in the case that the claims of Douglas respecting the so-called diagnoses are false and fraudulent.

"Douglas does not advertise in newspapers, or circularize through the mails. He obtains 'patients' by distributing printed cards [see illustration.—Ed.] through the medium of former patients or agents who, he says, travel from place to place selling his medicines on commission."

Douglas assumed the title of "Professor" as the result of some study alleged to have been made by him in India. Both the Proprietary Mixtures Syndicate, Inc., and the Yonga Yoga Scientist, Inc., were incorporated in Arizona. Both of them were owned lock, stock and barrel by Douglas and his wife.

"Mr. Douglas testified at the hearing that since beginning his operations in 1922 he has treated approximately 1,500 persons. He also stated that the charges for the treatment are from $35.00 up. On this basis he would have taken from the public a minimum of $52,500. It is much more probable, however, that these figures would run much higher, as the evidence shows patients are usually asked to pay Mr. Douglas around $100.00."

Judge Donnelly's memorandum closed with the following pertinent statement:

"*According to the medical testimony adduced by the Government* in this case, many of the diseases undertaken for treatment by Douglas are of a very serious nature, and unless properly diagnosed and intelligently treated may result disastrously to the sufferer. Such diseases and ailments often tax to the utmost the knowledge and facilities of the most skilled physicians and surgeons with the patient directly under observation.

"The futility of treatment by mail, where the patient has never come in contact with the physician, to say nothing of a layman attempting to diagnose and treat, is readily apparent. As stated before, Douglas claims to make his diagnosis by 'rule.' He needs no symptoms, just the birthdate. His conclusions, which he admits are the same whether the person is real or imaginary, are thus arrived at by combining the so-called rule or rules with what additional information he may obtain from the patient and possibly an active imagination."

Some late activities of the Proprietary Mixtures Syndicate, Inc., were brought to the attention of the Bureau of Investigation of the American Medical Association some weeks ago. A Colorado physician sent to the Association a number of nostrums put out by this concern with the request that information be furnished as to whether or not any of them contained iodine. It seems that a patient of the doctor had paid $236 for this quackery, which was to cure her of blindness. The woman had thyroid adenoma, and following the use of the nostrums became seriously thyrotoxic. One of the specimens sent in by the doctor was found to be essentially tincture of iodine!

Correspondence

"THE SPLEEN IN MEASLES"

To the Editor:—In The Journal, April 17, in the editorial on "The Spleen in Measles—An Overlooked Symptom," it is stated that "only now has it been made unmistakably clear through the records of Bleyer of the St. Louis Children's Hospital that enlargement of the spleen should be included in the symptomatology of measles." And at the close, "And all of this is the simple finding regarding one of the largest organs in the body in the examination of a few hundred sick children, while half a hundred textbooks have denied, disregarded or debated the symptom."

Since 1923 I have been calling attention to this symptom *in my reports to the International Health Board, to the state* board of health, and in published letters and articles, begging those who had opportunity to follow the matter up. The priority of discovery makes no difference, but the difference in conclusions reached should cause us to peruse the matter further.

In Public Health Bulletin 156, page 133, I am quoted as saying at the New Orleans meeting in 1924: "But as valuable as the method is, it must be remembered that other things (besides malaria) may enlarge the spleen. Dawson, Ga., has been drained and is practically free from malaria. In examining the first three grades of the school there, I found fully 75 per cent of the children with enlarged spleens, though there was no *history of malaria, and they were as pink and* healthy a bunch as I have ever seen. . . . Every one of them had just recovered from measles.

"I visited a number of other towns (Cordele, Vienna, Unadilla) and counties, and I soon got so I could examine a few children and state that there had been an epidemic of measles among the children. And I never once went wrong.

"The enlargement from measles is not great, usually what Dr. Darling calls 'palpable on inspiration,' and has a doughlike or boggy feeling, distinguishing it from the hard, sharp-edged spleen of malaria. The surprising thing about these measles spleens was the length of time that they remained enlarged. After thirty days, 85 per cent were still palpable, with a slow decrease each month until after six months, about 20 per cent were still palpable. . . . Following about twenty cases of enlarged and troublesome tonsils I found an enlargement. This makes me think that even a throat specialist might make use of this method of examination. They are divided as to whether to remove all enlarged tonsils or not. If I had a case of enlarged tonsils with a palpable spleen I would surely remove those tonsils, for I would know that they were poisoning the patient.

"I am dwelling on these things in the hope that others will take it up and see what we can find out about the spleen following scarlet fever, smallpox and other infections"

Your editorial mentions the "almost abrupt appearance of the spleen during the eruptive stage of measles, and the suddenness of its disappearance as the rash subsides." I never saw any cases during the eruptive stage. All my patients had recovered and were back in schools, and the thing that interested me was the fact that many of them were still palpable for six months. I cannot explain this difference, unless it is due to different methods of palpating. In our method the patient lies with head to the examiner's left, flat on back, perfectly relaxed, knees flexed. The examiner's fingers are placed rather lightly at the border of the patient's left ribs, and the patient is requested to breathe deeply. With practice, a very small spleen may be felt to descend and tap the fingers.

In rubella and in chickenpox I have not been able to demonstrate an enlarged spleen, and I am wondering whether every epidemic of measles would present this sequela with equal constancy. Certainly we need others to record their observations.

M A. Fort, M D., Bainbridge, Ga.
Director, Tri-County Health Work

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request.

HEALING OF DRILL HOLES IN BONE

To the Editor —Please advise me as to the time required, following the drilling of an osteomyelitis, adjacent to the upper epiphyseal end of the tibia but not proximal to it, for such drill holes to heal so thoroughly that they will not show on a roentgenogram, assuming that the drill was of moderate or relatively small size

L. H. Childs, M.D., Flint, Mich.

Answer.—So far as we know, there never has been a statement of observations of this nature in the literature. Healing may take months or even a year, depending on the size of the drill holes, in a case in which the osteomyelitis was minimal.

"IRRITATION FOLLOWING SHAVING CREAMS"

To the Editor.—In The Journal, April 17, appeared a note relative to eczema from the use of "Molle" and "Barbasol." I can add to these reports a case of edema The patient had a dry, scaly skin and I suggested using one of these creams after shaving, instead of soap and water. Within five minutes after use of Molle, the patient's face swelled almost beyond recognition. The condition was relieved by epinephrine administered hypodermically. I wrote to the makers of the product, explaining the case and requesting information as to the ingredients of their cream, as I wished to discover the offending protein I received, however, only a polite but meaningless letter H. F. A., M D.

INJECTION OF TRYPARSAMIDE

To the Editor —I have received a circular which says that tryparsamide may be given subcutaneously. While giving an injection of it into a small vein, I unhappily got a small amount of it into the tissues outside the vein, and an abscess resulted Is it supposed to be a severe irritant or is it safe to give it subcutaneously as stated? Please omit name

M.D , Chicago.

Answer —The general experience of all physicians who have used tryparsamide extensively has been that it is almost free from any local irritative action, and that the patient experiences no discomfort if part of the injection goes outside the vein. Thus, Wade H. Brown and Louise Pearce (The Journal, Jan. 5, 1924, p. 5) write that "very slight local irritation is produced by subcutaneous or intramuscular injections." However, as a matter of fact, the drug is almost exclusively given intravenously.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

American Board of Otolaryngology, Canada: Montreal, June 1. Sec, Dr H W Loeb, 1402 South Grand Boulevard, St. Louis, Mo

Delaware: Wilmington, Regular Board and Homeo. Board, June 15 17. Pres, Dr H W Briggs, Wilmington

Florida St Petersburg, June 14 15. Sec., Dr. H. M. Rowlett, Box 603, Tampa

Georgia Atlanta, June 9-11; Augusta, June 1 3. Sec, Dr. C. T. Nolan, Marietta, Ga

Iowa Iowa City, June 8 10 Commissioner of Health, Dr. Don M Griswold, State Capitol, Des Moines

Kansas Kansas City, June 15. Sec, Dr. Albert S. Ross, Sabetha

Kentucky Louisville, June 24 26 Sec, Dr. A. T. McCormack, 532 West Main Street, Louisville

Maryland Baltimore, Reg. Bd, June 15-18. Sec, Dr. Henry M. Fitzhugh, 1211 Cathedral St, Baltimore Homeo Bd., June 15-16 Sec, Dr Joseph S Garrison, Old Orchard Rd, Ten Hills, Baltimore

Michigan: Ann Arbor, June 8 10 Detroit, June 14-16. Sec, Dr. Guy L Connor, 707 Stroh Bldg, Detroit

Minnesota Minneapolis, June 15. Sec., Dr. A. E. Comstock, 734 Lowry Bldg, St Paul

Missouri: St Louis, June 28 July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.

National Board of Medical Examiners: Part I, June 21-23; Part II, June 22 23 All applications should be made on or before May 15. Sec, Dr J S Rodman, 1600 Walnut Street, Philadelphia.

Nebraska Omaha, June 8-10 Director, Bur. of Exam. Bds, Mrs. Clark Perkins, Lincoln

New Jersey Trenton, June 15 16 Sec, Dr. Alexander MacAlister, Room 1101, Trenton Trust Bldg, Trenton.

New York: Albany, Buffalo, New York and Syracuse, June 28 July 1. Chief, Mr Herbert J Hamilton, Education Bldg, Albany.

North Carolina Raleigh, June 21-25. Sec, Dr. K. P. B. Bonner, Morehead City

North Dakota: Grand Forks, July 6 Sec, Dr. G. M. Williamson, Grand Forks

Ohio. Columbus, June 8 11. Sec, Dr H. M Platter, Columbus

Oklahoma Oklahoma City, June 15 16 Sec, Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 6 8. Sec, Dr. U. C. Coe, 1208 Stevens Bldg, Portland

South Carolina Columbia, June 22 Sec, Dr. A. Earle Boozer, 505 Saluda Ave, Columbia

Texas. Austin, June 15 17. Sec, Dr. T. J. Crowe, 918 Mercantile Bank Bldg, Dallas

Vermont Burlington, June 23 Sec, Dr. W. Scott Nay, Underhill

Virginia Richmond, June 16 19 Sec, Dr. J. M. Preston, 720 Shenandoah Life Bldg, Roanoke

West Virginia Martinsburg, July 6 Sec, Dr. W. T. Henshaw, Charleston

Wisconsin Milwaukee, Basic Science Board, June 12-13 Sec, Dr. M F Guyer Regular Board, June 29-July 1. Sec, Dr. Robert E. Flynn, State Bank Bldg, La Crosse

SCHOOLS OFFERING SUMMER COURSES IN 1926

Prepared by the Council on Medical Education and Hospitals

California

Stanford University School of Medicine, 2398 Sacramento Ave, San Francisco.—Courses are offered for qualified graduates in medicine and undergraduates of this and other schools for clinical and laboratory work in the following departments as special workers: pharmacology, pathology, general medicine, diabetes, electrocardiography and basal metabolism, chest diseases, pediatrics, neuropsychiatry, skin and syphilis, metabolism laboratory, radiology, physiotherapy, general surgery, orthopedic surgery, genito-urinary surgery, ophthalmology, otorhinolaryngology, surgical pathology, obstetrics and gynecology, and female urology. Summer term begins, June 15, and ends, September 1. Dr. William Ophuls, dean.

University of California Medical School, Parnassus and Third avenues, San Francisco.—Courses for qualified graduates in medicine, given in general medicine, pediatrics, gastro-intestinal diseases, dermatology, syphilology, radium therapy, general surgery, orthopedic surgery, otorhinolaryngology, ophthalmology, genito-urinary diseases, general pathology, roentgen ray, obstetrics and gynecology, circulatory diseases, laboratory diagnosis, neurology and neuropsychiatry, and neuro-otology. Summer term begins, June 7, and ends, July 3. Dr. L S Schmitt, acting dean.

Colorado

Colorado School of Tuberculosis, Colorado Springs — Course designed for qualified graduates. Term begins, July 1, and ends, August 1. From August 3 to 10, opportunity will be offered for practical work in the various sanatoriums. The preference of the students for special subjects, such as laboratory methods, roentgen ray, artificial pneumothorax and physical diagnosis, will be consulted as far as possible. Dr. G. Burton Gilbert, secretary.

University of Colorado School of Medicine, Denver.—Courses open for undergraduate or graduate students, in anatomy, bacteriology and public health, biochemistry, pathology, clinical pathology, physiology and pharmacology. Summer session divided into two terms. The first begins, June 21, and ends, July 24; the second begins, July 26, and ends, August 28. Dr. Charles N. Meader, dean.

Connecticut

New Haven School of Physiotherapy, 303 Whitney Avenue, New Haven.—Courses for qualified graduates in medicine. Individual instruction may be had and also practical work on apparatus. The course begins, June 10, and ends, October 1. Dr. Harry Eaton Stewart, director.

District of Columbia

George Washington University Medical School, 1335 H Street, N.W., Washington.—Courses offered for medical students in pathology, bacteriology and clinical microscopy. An opportunity in the laboratory for two or three graduate students who desire to spend their entire time in laboratory work is also offered. Dr. W. C. Borden, Dean.

Howard University School of Medicine, Corner of Fifth and W streets, N.W., Washington.—Courses open to graduates of recognized medical colleges. Instruction given in general surgery, gynecology, genito-urinary surgery, internal medicine, otolaryngology, ophthalmology, roentgenology, public health, laboratory methods and physical diagnosis. Summer term begins, June 7, and ends, July 19. Dr. Edward A. Balloch, dean.

Georgia

Emory University School of Medicine, 98 North Butler Street, Atlanta.—A clinical course is designed for graduates and undergraduates during the first two weeks in July. This course will be entirely clinical, devoted primarily to general medicine and surgery, but with a few things in the specialties which bear particular relation to these subjects. Dr. Russell H. Oppenheimer, dean.

Illinois

Rush Medical College, Wood and Harrison streets, Chicago.—This school has the four quarter system, and therefore the usual summer course is offered to undergraduates. Instruction in otology and laryngology for graduates in medicine is offered and facilities permit of taking but eight men each year, two entering each quarter—January, April, July and October. Dr. Ernest E. Irons, dean.

Loyola University School of Medicine, 706 South Lincoln Street, Chicago.—This school has the four quarter system, and therefore the usual summer course is offered to undergraduates. Dr. Louis D. Moorhead, dean.

University of Illinois College of Medicine, Congress and Honore streets, Chicago.—Postgraduate course for physicians will be offered in all departments throughout the month of June. In some departments the work will be given throughout the day, in others, only half the day. In some fields the courses will be given six days a week, others only three, four or five days a week. Registration will be limited to a small number. The full-time registration fee will be $100, for half-time registration (or less) $50. Mr. William H. Browne, secretary.

Indiana

Indiana University School of Medicine, Indianapolis.—During the summer of 1926, short courses beginning June 10 and lasting for six weeks will be offered to the physicians of Indiana. Instruction given in pathology, pharmacology, medicine, surgery, gynecology, genito-urinary diseases, rhinology, otology, laryngology, ophthalmology and dermatology. For further information apply to the registrar.

Iowa

State University of Iowa College of Medicine, Iowa City.—Courses are offered for undergraduate students in the following departments: anatomy, histology, embryology, biochemistry, physiology and bacteriology. The summer course is for six weeks and a semester's work in any of the subjects mentioned may be completed with the exception of histology and anatomy, in which only a part of a semester's course can be completed. Dr. John McClintock, junior dean.

Kansas

University of Kansas School of Medicine, Lawrence-Kansas City.—Courses for medical students offered at Lawrence in physiology, bacteriology and immunology, and at Kansas City in pathology. Dr. H. R. Wahl, acting dean.

Louisiana

Tulane University School of Medicine, 1551 Canal Street, New Orleans.—Courses offered for medical students in anatomy, embryology, histology, neuro-anatomy, physiologic chemistry, dermatology, special pathology and physical diagnosis. All courses begin, June 14, and continue for a period of six weeks, ending, July 24. Dr. C. C. Bass, dean.

Maryland

University of Maryland School of Medicine, Lombard and Green streets, Baltimore.—A review course for physicians will be offered during the month of June. These courses are not planned and will not serve to enable the practitioner to become a specialist; but it is hoped that they will meet the needs of those who wish to review the fundamental data in some field, and to inform themselves concerning recent advances in methods of diagnosis and treatment. Dr. J. M. H. Rowland, dean.

Massachusetts

Boston University School of Medicine, 80 East Concord Street, Boston.—Dr. William Duncan Reid will offer a one month's course in cardiology either in July or in August at Boston University and associated institutions. Applicants are requested to write Dr. Reid for particulars.

Harvard University Medical School, 240 Longwood Avenue, Boston.—Courses for graduates open from June 1 to September 30, in anatomy, physiology, biologic chemistry, bacteriology, pathology, preventive medicine and hygiene. Dr. Samuel R. Meaker, secretary.

Michigan

University of Michigan Medical School, Ann Arbor.—Courses open to undergraduate students and practitioners of medicine in the following departments: anatomy, bacteriology, dermatology and syphilology, internal medicine, neurology, obstetrics and gynecology, ophthalmology, otolaryngology, pathology, pediatrics, pharmacology, physiologic chemistry, physiology, roentgenology and surgery. Course begins, June 21, and ends, July 30. Dr. Hugh Cabot, dean.

Minnesota

University of Minnesota Medical School, Minneapolis.—This school has the four quarter system, and therefore the usual summer course is offered to both graduate and undergraduate students. Dr. Elias P. Lyon, dean.

Missouri

St. Louis University School of Medicine, 1402 South Grand Avenue, St. Louis.—Work adjusted to needs of three classes of students:

1. Undergraduate medical students. Courses in the laboratory branches are provided, so that students who desire may secure advanced standing or remove deficiencies in work previously taken. Open to both practitioners and undergraduates.

2. Preparatory and collegiate medical students. Courses in biology, inorganic and organic chemistry, physics and language are offered for the benefit of students who desire to attend a medical school but who still lack sufficient college credit to qualify for admission.

3. Teachers, etc. High school teachers and others who do not care for credit in medicine but who possess the required preliminary training will be admitted to the laboratory and other courses.

Session extends from June 1 to July 24. Apply to director of summer school.

Washington University School of Medicine, Euclid Avenue and Kingshighway, St. Louis.—A four weeks' course in obstetrics and diagnostic gynecology for general practitioners will be offered beginning May 24, and extending to June 19. During the first week in each June, September and December a course for practitioners who wish to acquaint themselves with the more recent developments in the study of diseases of the heart and circulation will be offered. Inquiries and applications should be made to the registrar.

Nebraska

University of Nebraska College of Medicine, Forty-Second and Dewey Avenue, Omaha.—Courses offered in physiology and clinical pathology, beginning, June 8. Dispensary and University Hospital assignments for medical college credit in clinical work will be continued. Other courses may be planned if there is a demand on the part of the students. Dr. J. Jay Keegan, dean.

New Jersey

Physiatric Institute, Morristown.—The course, for graduate physicians, gives a practical working knowledge of the management of diabetes, obesity, nephritis, hypertension, etc., according to the methods employed in this institute. The work includes lectures and practical experience in the laboratory, diet kitchen and wards. The tuition is $150 for the one month of full-time work (July 1 to 31). Dr. Frederick M. Allen, director.

New York

Albany Medical College, 58-64 Eagle Street, Albany.—Graduate courses in public health for physicians in conjunction with the New York State Department of Health began in March and will end the latter part of June. It is possible that a course may be repeated in August or September. Communications and applications should be addressed to the director, Dr. Charles C. Duryee, State Department of Health, Albany.

Columbia University College of Physicians and Surgeons, 437 West Fifty-Ninth Street, New York City.—Courses for medical students, offered from July 6 to August 13, in anatomy, bacteriology, cancer research, neurology and practice of medicine. Courses for graduates in medicine are given from June 1 to June 30, in medical diagnosis and pathology; in preventive medicine and public health, from July 6 to August 13; in internal medicine, from June 14 to July 16; in gastro-enterology (lectures, laboratory and clinical work), June, July and August. Dr. William Darrach, dean.

Herman Knapp Memorial Eye Hospital, 500 West Fifty-Seventh Street, New York City.—A course in ophthalmology is offered to qualified medical practitioners which extends over a period of eight months. These courses start, April 1, July 1 and October 1. For further information apply to Dr. Gerald H. Grout, secretary.

New York Eye and Ear Infirmary, Second Avenue, corner Thirteenth Street, New York City.—Courses offered for medical graduates in ophthalmology and otology. Apply to Dr. Webb W. Weeks, secretary, for reservation in the May, June or July classes.

New York Polyclinic Medical School and Hospital, 341-351 West Fiftieth Street, New York City.—Courses for qualified graduates in surgery, gynecology, urology and proctology. Courses may begin at any time. For information address executive officer.

New York Post-Graduate Medical School and Hospital, 301 East Twentieth Street, New York City.—Courses available during the summer term are the same as those offered during the year, open for general practitioners. Dr. William D. Cutter, dean.

Trudeau School of Tuberculosis, Saranac Lake.—A six weeks' course for the intensive study of tuberculosis is being offered, from May 17 to June 26, for recent graduates and hospital interns. Dr. Edward R. Baldwin, director.

University of Buffalo Medical Department, High Street, near Main, Buffalo.—Summer courses for graduates and students are being offered in anatomy beginning July 10, and in chemistry from June 15 to August 1. Dr. C. Sumner Jones, dean.

North Carolina

University of North Carolina School of Medicine, Chapel Hill.—No medical course offered this summer, but one extension course will be offered covering special subjects in general medicine. Further information may be obtained through the dean, Dr. I. H. Manning.

Ohio

Ohio State University College of Medicine, 710 North Park Street, Columbus.—A course in bacteriology and general work in the dispensary are open to advanced undergraduate and graduate students. The summer quarter extends from June 17 to August 28. Dr. Eugene F. McCampbell, dean.

Western Reserve University School of Medicine, 2109-2115 Adelbert Road, Cleveland.—Starting about June 14, a summer course in biochemistry will be offered to undergraduates for make-up work. Course not given unless a certain number apply. Students from other schools admitted when feasible. Dr. Carl A. Hamann, dean.

Pennsylvania

University of Pennsylvania Graduate School of Medicine, Philadelphia.—Courses for graduates, during the summer months, in various hospitals and institutions offered in conjunction with the graduate school are as follows: cardiology, May 3 to June 26 and August 30 to October 23; gastro-enterology, May 24 to July 2; operative surgery and surgical anatomy, April 19 to June 12; laryngoscopy, bronchoscopy and esophagoscopy, June 7 to June 19. Dr. George H. Meeker, dean.

University of Pittsburgh School of Medicine, Bigelow Boulevard, Pittsburgh.—Postgraduate course for general practitioners begins, June 1, and ends, June 12. Address all communications to Edith S. Glenn, secretary.

Texas

Baylor University College of Medicine, 720 College Avenue, Dallas.—Work adjusted to needs of three classes:

1. Undergraduates and special students. Regular medical college courses, for which subject credit is given, is offered from June 14 to August 1.

2. Summer clinics for practitioners. These clinics are of a general character and extend from May 31 to June 12. No fees are charged nor are any certificates of attendance granted.

3. Public health course. This course is primarily for county and city health officers, and extends from May 31 to June 12, inclusive. No fees are charged, nor are any certificates of attendance granted. Dr. Walter H. Mouraund, dean.

University of Texas School of Medicine, Avenue B, between Ninth and Tenth streets, Galveston.—Summer clinics in all clinical subjects, including ward cases, obstetric practice and outpatient clinics, open to students of the medical school of the University of Texas from May 24 to June 5. Dr. William Keiller, dean.

West Virginia

West Virginia University School of Medicine, Morgantown.—Courses offered to undergraduate students in (gross) anatomy, including neurology, histology, physiologic chemistry and bacteriology, during the summer term of twelve weeks, which begins, June 21. Dr. John N. Simpson, dean.

Virginia

University of Virginia Department of Medicine, Charlottesville, Va.—Courses in the medical sciences are being offered during the summer for medical students who are deficient in these subjects and desire to make a review: Group A, histology and embryology. Group B, anatomy, topographic anatomy and anatomy of the human nervous system. Group C, biochemistry. Group D, pharmacology. Courses will not be given unless a certain number apply. Dr. James C. Filippin, acting dean.

Wisconsin

University of Wisconsin Medical School, Madison.—Summer courses open to undergraduate students from June 23 to August 6 in anatomy, bacteriology, hygiene, medicine, pharmacology, physiologic chemistry and physiology. Dr. Charles R. Bardeen, dean.

Wisconsin January Examination

Dr. Robert E. Flynn, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held in Madison, Jan. 12-14, 1926. The examination covered 18 subjects and included 100 questions. An average of 75 per cent was required to pass. Of the 22 candidates examined, 20, including 4 osteopaths, passed and 2, including 1 osteopath, failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Northwestern University Medical School	(1925)*	85.2
Rush Medical College	(1925) (1925)*	86.8, 89.7 89.8, 92.7
University of Illinois College of Medicine	(1925)*	87.6
University of Michigan Medical School	(1925)	85.4
Harvard University	(1922)	87.5
University of Minnesota Medical School	(1925)	91
Washington University School of Medicine	(1924)	83
University of Pennsylvania School of Medicine	(1924)	88.7
Marquette University School of Medicine	(1908) (1925)*	81 82.2
German University of Prague, Czechoslovakia	(1903)†	89.9
University of Jena, Germany	(1917)†	82.5
University of Budapest, Hungary	(1912)	80.6
Osteopaths		80.4, 81.5, 84.5, 90

FAILED

College	Year Grad.	Per Cent
National University of Athens, Greece	(1916)†	76.5
Osteopath		71.5

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1913)	Illinois
Hahnemann Medical College and Hospital, Chicago	(1908)	Illinois
Medical School of Maine	(1906)	Maine
Washington University School of Medicine	(1916)	Illinois
Albany Medical College	(1910)	New York
University of Nashville Medical Department	(1878)	Tennessee
University of Christiania, Norway	(1892)	Minnesota

* These candidates have finished their medical courses and will receive an M D degree on completion of a year's internship in a hospital

† Verification of graduation in process.

Dr. Flynn also reports the special meeting held at Milwaukee, April 14, 1926, at which 5 candidates were licensed by reciprocity. The following colleges were represented:

LICENSED BY RECIPROCITY

College	Year Grad	Reciprocity with
Hahnemann Med College and Hosp, Chicago..(1913),	(1918)	Illinois
Kansas Medical College, Topeka	(1907)	Kansas
Harvard University	(1911)	Missouri
John A. Creighton Medical College	(1915)	Iowa

Social Medicine and Medical Economics

SOCIAL MEDICINE

A Method of Teaching the Public Health Point of View to the Medical Student

B. FRANKLIN ROYER, M.D, SC D
Medical Director, National Committee for the Prevention of Blindness
New York

About three and a half years ago a symposium on "The Next Step for State Health Departments" was conducted as a special session of the annual meeting of the American Public Health Association in Cleveland. Five distinguished state health officers presented their individual views in formal papers. The five authors left the impression with the audience that the medical profession, both the highly organized and the less well organized, was not approvingly cooperative and in some instances was openly antagonistic to public health work except of the police type, and was fearful of state medicine. The chairman of the meeting, Dr. John Dill Robertson, health officer of Chicago, challenged me, then executive officer of the Massachusetts-Halifax Health Commission, to state what the next step would be in Nova Scotia. When thus challenged by the chairman, I developed the thought that public health executives and teachers of hygiene in medical schools had heretofore failed to teach the medical student the right point of view toward social medicine and public health.

The plans and methods outlined extemporaneously were at that time in existence for the most part as a paper agreement only between Dalhousie University, Halifax, Nova Scotia, and the International Health Board, then representing Mr. John D. Rockefeller in distributing certain personal gifts for improving medical education in Canada. Enumeration was given of the organizations cooperating with the university in its medical teaching, as follows: one large general hospital, a children's hospital, two specialized hospitals, one for tuberculosis and one for maternity work all grouped about the medical school, a philanthropically maintained public dispensary of the usual type operating in a building some distance across the city, and the Massachusetts-Halifax Health Commission. All of these related institutions indicated a disposition to favor a special health center building if built in the university and hospital area from funds provided by Mr. Rockefeller.

The plan as outlined consisted of the erection of a special building[1] at the cost of a quarter of a million dollars, to be laid out for the accommodation of all public health clinics and of the curative medicine ambulatory clinics that might be required for a community already numbering 60,000 people. The hospitals, it was hoped, would in future refrain from developing outpatient dispensaries. The old Halifax Dispensary agreed to close its old building, move into this new building, and coordinate its activities (without losing its identity) with those services to be conducted under the Medical Department of Dalhousie University in the new health center building The general social agencies of the city and the unofficial special health agencies operating in the south half of the city of Halifax and those that might develop around the hospitals would be offered headquarters in this new health center building.

The city health department, as then represented on the Massachusetts-Halifax Health Commission, fully understood the scheme, and the commission was expected to provide socially trained public health nurses and visiting housekeepers to cover every family patronizing the new health center It was likely that the commission would meet operating costs of the various public health clinics for several years. It was expected that well baby, preschool age guidance, preschool age dental clinics, nutrition classes, posture services and diagnostic chest clinics would be included in this health center, and that the commission might assist the partially subsidized venereal disease clinic.

The Dalhousie University medical school, it was understood, would furnish all medical personnel and organize and maintain the full quota of outpatient department and ambulatory services, such as pediatric, general medicine, surgical, neurologic (including psychiatric) and, as soon as practicable, metabolic and such other services as might be required.

It was understood that there should be a close "tie-in" of all activities of this new building with the department of preventive medicine, and that the professor of this branch (hygiene and preventive medicine) should have an opportunity to exact of the medical student a complete home environmental study and habit study of assigned ambulatory cases carefully examined by him in the clinic building.

It was anticipated in this discussion that physical diagnosis and medical teaching would probably be carried on both in the public health clinics and in the curative medicine clinics, and that a student's studies would not be considered complete unless they included home visits and home studies covering every detail of living, diet, exercise, sleep, ventilation, clothing, and the thousand and one types of error and exasperation found in the home; that an opportunity would be afforded in this building for the student of medicine to bring his written report of the home environment and recommendations to the desk of the professor of hygiene and preventive medicine; and that this university teacher could have as a check-up against the student's hygiene study the complete environmental report of the well trained public health nurse, social worker or visiting housekeeper assigned to cover families patronizing the public health clinics and the curative medicine clinics.

It was even hinted in this extemporaneous discussion that the final grades to be given on hygiene and preventive medicine might advantageously be based on the practical application of the student's knowledge to these environmental studies and his recommendations based on them.

It was pointed out that such practical methods in teaching applied hygiene and preventive medicine would compare favorably with application of principles to practice in the other departments of a medical school. The didactic instruction in medicine, surgery, pathology, etc., is followed by practical application of these principles at the bedside, in the surgical clinic, or in the postmortem room.

The department of hygiene and preventive medicine may with such a plan supplement the didactic instruction of this department with equally practical applied lessons, and utilize the grades thereon as a final grade.

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[1] An illustrated article by Dr. William Harop Hattie on "Teaching Medical Students Newer Public Health Work," published in Nation's Health, June 15, 1924, shows plans of the health center building and gives some operation plans A second article by the same author published in Modern Hospital, August, 1925, on "Public Health Clinic Correlates Preventive and Curative Practice," discusses this new coordinated effort

Such an application would be new in medical teaching and would seem to give the medical student a practical view of applied social medicine as every physician should apply it.

The plan, as presented extemporaneously in Cleveland in 1922, materialized practically as outlined, and became operative in November, 1924. Dr. William H. Hattie, who for five years had been Nova Scotia's provincial health officer, and lecturer on hygiene and preventive medicine in the medical school of the university, resigned from his provincial position and gave full time to teaching work. His university chair was extended to include that of director of the newly erected health center building prior to its equipment.

For a year following the opening of this new building, Dr. Hattie has been watching the students of medicine with their opportunities to gradually become socially minded. He can watch the student who, until recently, had scant grasp of the influence of environment, reach the stage at which he recognizes how much of the condition that brought the patient to the clinic was due to environmental fault, and can see the student realize that in many instances medical problems may be corrected only by giving intense attention to environmental faults.

Dalhousie University is blazing a new trail in preventive medicine. Dr. Hattie is giving the students who pass his chair an opportunity to see that social medicine is far from being state medicine; in fact, is opposed to state medicine. He is making the young practitioner appreciate that physical examination of the patient and writing of a prescription for a drug are, after all, the smallest part of the sum total of the practice of medicine.

Dalhousie University's school of medicine is in a position to send out through the three maritime provinces practitioners of medicine who will have no fear of state medicine, but who will serve as the real leaven in their communities to stimulate and arouse those various social activities which, when coordinated with executive health work, will multiply the effects of public health endeavor manyfold. This new departure in teaching social medicine will be followed with great interest and is likely to be adopted in all progressive universities.

370 Seventh Avenue.

Book Notices

Aviation Medicine. By Louis Hopewell Bauer, A.B., M.D., Major, Medical Corps; United States Army Commandant, the School of Aviation Medicine. Published by authority of the Surgeon General. Cloth. Price, $7.50. Pp. 241, with 35 illustrations. Baltimore: Williams & Wilkins Company, 1926.

The flight surgeon is destined to become second only to the commanding officer in the training and care of any aviation unit, and his great value to civil aeronautics will become indispensable as the larger companies are organized for the transportation of mail, express, freight and passengers. Little of originality is claimed by the author of this book, but he has endeavored to correlate the results of the many workers in their respective fields in such a way that the book will be of value not only to the flight surgeon, the student of aviation medicine and the recruiting air officer, but to the general medical man in all walks of life. The book is divided into three sections, each containing approximately sixty pages, and a supplement. The first section gives the qualifications of a flier. At present the best fliers are between the ages of 20 and 28. Those under 20 usually lack good judgment, while those over 35 should be taught only as administrative officers. Physically, the applicant should be well proportioned, while good eyesight is one of the most important prerequisites. Twenty twentieths is not too high, although twenty thirtieths in each eye may not disqualify. Judgment of distance and deep perception depends on good eyesight, and the applicant should have good peripheral vision and normal color vision. Latent hyperopia, heterophoria and night blindness should absolutely disqualify. The nose and throat should be free from disease and the ear should receive especial attention, particularly the drum, middle ear, eustachian tubes and hearing. Equilibrium, which plays an important part in flying, is governed by the whole proprioceptive mechanism. Vision, the vestibular mechanism and the indefinite "muscle sense" or "feel of the seat" are of importance. Nervous stability is an important factor, since the flier is subjected to unusual culminative stresses. The psychoses and psychoneuroses and even the family history may have an important bearing on the ability of the man to retain his nervous stability, while his own history should be obtained with the greatest care.

The second section considers the physiology of aviation, including the classification of the fliers. The author goes into the physiology of the respiratory and circulatory systems at sea level and at the higher altitudes, giving not only the change in hemoglobin, red cells and white cells, which is due to the lack of oxygen, but also the changes in the metabolic rate. Facts and figures prove that between 40,000 and 45,000 feet it is almost impossible for a human being to live, even though he is breathing pure oxygen, for beyond this point the available oxygen pressure in the lungs will be too low to sustain life. The heart at high altitudes is at no greater strain than the rest of the circulatory system. With a normal heart accompanied by soft arteries, the effects of altitude will not be lasting on either, as recovery is prompt on the administration of oxygen. Psychologically, the effects of altitude come on the aviator unawares: stimulation, followed by a feeling of well being, then decrease in attention and loss of muscle control. Altitude classification is rather difficult but is now being done with much success in the air service. Wind, cold and speed all have their deleterious effects on the aviator. To wind may be ascribed an increase in metabolism, with increased demand for oxygen; difficult breathing, and cooling of the body. Cold brings on stiffness, chilling and a tendency to sleepiness, and stimulates metabolism and the demand for more oxygen. Speed, especially the centrifugal force at curves, tends to cause anemia of the brain, with consequent haziness, laziness, dizziness and perhaps unconsciousness. Recovery is prompt.

The third section is devoted to the care and maintenance of the flier. Since great care is exercised in his selection and classification, even greater care should be exercised in keeping him fit, since the past has proved that deterioration is the natural tendency of all fliers. Fatigue may be brought on by too many hours of flying and by altitudes above 15,000 feet. Staleness and nervous exhaustion depend on habits and temperament of the individual, the type of machine and work, weather conditions, and the environment of the airdrome. Too much or too little flying, insufficient exercise, dissipation and loss of sleep have the same effect. The author believes that definite condition develops in a flier as a result of his air work. Mental and physical signs and symptoms are closely associated with "effort syndrome," nervous fatigue, distress on exertion, loss of interest in his work, poor muscular control, inattention and carelessness. Effort syndrome is an overresponse of the circulatory and respiratory systems to physical efforts, marked by breathlessness increased on exercise, precordial pain increased by exercise, exhaustion, mental and physical, palpitation, giddiness, even fainting, headache, lassitude, irritability, sleeplessness, inattention, cold hands and feet, and sweating of the hands, feet and axillae. This condition must be caught in its incipience by the flight surgeon in order to save a good flier and avoid a serious accident.

Chapter 13 describes the protective devices and their uses; the oxygen supply apparatus, the gas apparatus, liquid oxygen, the amount of oxygen required at certain given altitudes, masks, goggles, ear protection, helmets, parachutes, belts and clothing, giving in detail the best articles for use of the present day flier.

Special training is necessary to become a flight surgeon. He must first be well grounded in internal medicine, and in addition must have some knowledge of physiology, psychology, ophthalmology and otology. He must be able to inspire confidence not only in the commanding officer, but also in the men under his care. He must actually live with his fliers and learn their inner life and must be able to recognize staleness, fatigue and physical unfitness in its incipience He is both physician and trainer and his duties are quite different from those of a medical officer in any other branch of the service. The flight surgeon should actually fly in all sorts of weather, in different types of machine, across the country, and on acrobatic and altitude flights, so he may obtain a better insight into the life of his fliers. The civil flight surgeon is something yet to develop, but surely will be needed in the near future.

Chapter 15 is devoted to "Aviation Accidents and Their Prevention by the Flight Surgeon" so far as the pilot is concerned He must weed out the unfit, the careless and the mentally and physically sick and thus prevent accidents This chapter also covers the airplane ambulance, which it describes with its many uses, while chapter 16 gives a brief outline of the causes of dope poisoning by its various ingredients Tetrachlorethane, which gives rise to toxic jaundice, is now very seldom used. Methyl, ethyl and benzyl acetate, which cause anemia, vomiting, fever and fatty degeneration of the endothelium of the blood vessels, are among the other ingredients of dope. Proper methods of treatment are also discussed

The final chapter is devoted to civil aviation. At the present time there is no federal legislation governing aviation This is a ridiculous situation, since a pilot rejected as unfit, either physically or mentally, by the government, may hire a plane and fly, thus endangering not only himself, but others and property. Requirements for civil aviation need not be as strict as for the air service but should receive careful attention when an adequate federal law is passed, and should require a medical examination at least once every six months. In this chapter standard forms for a medical certificate are described, while in the supplement may be seen the directions for Schneider's test for circulatory efficiency; blanks for the rebreathing examination; the pulse and blood pressure determination; directions to the clinician, the psychologist and the pilot; low oxygen tension, and physical examination for flying. All the chapters are extensively illustrated and show the latest apparatus used in the United States Army.

The Nematode Parasites of Vertebrates. By Warrington Yorke, M D, Professor of Parasitology, University of Liverpool and Liverpool School of Tropical Medicine, and P. A. Maplestone, M D, D S O. With a foreword by C. W Stiles, Professor of Zoology, United States Public Health Service. Cloth. Price, $9 Pp. 536, with 307 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

In the sixty years since the appearance of Schneider's monograph, the fragmentary and scattered contributions on the roundworms, of which there have appeared a very large number, have been in need of interpretation and correction In the closely printed pages of this book are compressed a synopsis of the eight superfamilies recognized by the authors, a record of inadequately known and hence entirely unclassifiable genera, several briefer valuable lists, full indexes of generic and specific names, and finally a list of 684 articles cited in the text. The synopsis, which covers about 440 pages of the book, gives a succinct description of all known genera, including some that were necessitated by the work itself. The illustrations include more than a thousand sketches, most of which are new and all of which are good. To enter here into a critical analysis of results so extensive is impossible. That the details will excite criticism is a merit. Now for the first time biologists have a clear basis on which to work The book shows that the study has been carried on primarily in the laboratory and on the specimens themselves. In consequence, it possesses permanent value In view of the importance of *Nematoda* in human and comparative pathology, the medical worker will find this volume of marked service.

Eine Studie uber Krämpfe (A Study of Convulsions) Von J. Hughlings Jackson Uebersetzt und eingeleitet von Otto Sittig Paper. Price, 8 40 marks Pp. 145 Berlin: S Karger, 1926

The importance of Dr. Jackson's contributions to medical literature has long been recognized. The German publishers here make available a reprint of his original paper with a German translation on opposite pages.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender Selections will be made for more extensive review in the interests of our readers and as space permits.

The Modern Hospital Year Book The Hospital Reference Book. An Annual Reference Volume on the Building, Equipment, Organization and Maintenance of Hospitals and Institutions Also a Current Purchasing Guide to Hospital Requirements Published for Hospital Executives, Building and Equipment Committees, Purchasing Departments and Architects Sixth edition Cloth Price, $2 Pp 779, with illustrations Chicago The Modern Hospital Publishing Company, Inc., 1926.

The title tells everything

Lehrbuch der speziellen Pathologie und Therapie der inneren Krankheiten Fur Studierende und Aerzte Von Professor Dr. Med. Adolf Strumpell, Direktor der medizinischen Klinik der Universität, Leipzig Twenty fifth edition By Professor Dr Med et Phil Carly Seyfarth Second Volume Paper. Pp 985, with 200 illustrations Leipsic F C W Vogel, 1926

New edition of widely recognized German textbook of special pathology

An Introduction to Surgery By Rutherford Morison, M D, F R C S, M A, and Charles F M Saint, C B E, M D, M S, Professor of Surgery Cape Town University South Africa Second edition Cloth Price, $4 50 Pp 347, with 183 illustrations New York: William Wood & Co, 1926

New edition of standard work for students and young practitioners

Manual of Emergencies Medical, Surgical and Obstetric Their Pathology, Diagnosis and Treatment (Based upon Lenzmann's "Emergencies in Medical Practice") By J Snowman, M D, M R C P Second edition Cloth Price, $4 Pp 361 New York: William Wood & Co, 1926

Brief practical manual for ready reference well printed on india paper

Stale Bread Loss as a Problem of the Baking Industry. By Joseph Stancliffe Davis Ph D, and Wilfred Eldred, Ph D Food Research Institute Stanford University, California, Publication No 1 Paper Price, 50 cents Pp. 71 Stanford University Press, 1923.

Economical aspects and legislation affecting losses in bread industry by staling

Medical Diagnosis For the Student and Practitioner. By Charles Lyman Greene, M D, Chief of Staff, St Luke's Hospital, St. Paul. Sixth edition Cloth Price, $12 Pp 1468, with 723 illustrations. Philadelphia P Blakiston's Son & Co, 1926

Sixth edition of a systematic textbook of great popularity.

Die Hypertoniekrankheiten Von Dr. Eskil Kylin, Direktor des Militarkrankenhauses in Eksjo, Sweden Paper Price, 8.40 marks Pp 168, with 22 illustrations Berlin Julius Springer, 1926.

Monograph on hypertension with little reference to recent American contributions

Le cancer Contagiosite Hygiene dans la défense contre le cancer. Par le Dr M T de Gerin, de la Faculte de medecine de Paris. Paper. Pp 31 Paris E le Francois, 1925

Brief popular French essay on cancer prevention.

The American Baking Industry, 1849 1923 As shown in the Census Reports By Hazel Kyrk, Ph D, Associate Professor of Economics in the University of Chicago, and Joseph Stancliffe Davis, Ph D, Director, Food Research Institute Food Research Institute, Stanford University, California Miscellaneous Publication No 2. Paper. Price, $1. Pp. 108, with 10 charts Stanford University Press, 1925

Combination in the American Bread-Baking Industry. With Some Observations on the Mergers of 1924 25 By Carl L Alsberg, Director, Food Research Institute Food Research Institute, Stanford University, California Miscellaneous Publication No 3. Paper. Price, $1 50 Pp 148 Stanford University Press, 1926

Lehrbuch der systematischen Anatomie Von Professor Dr. Julius Tandler, Vorstand der 1 anatomischen Lehrkanzel, Wien 1. Band, Knochen, Gelenk und Muskellehre Second edition Paper. Price, 36 marks Pp 467, with 352 illustrations Leipsic: F. C. W. Vogel, 1926.

Seméiologie biliaire Par le Dr. Gaston Parturier, ancien interne des hopitaux de Paris Paper. Price, 30 francs net. Pp. 361. Paris: Gaston Doin & Cie, 1926.

La Arteritis Pulmonar y su Cuadro Clínico. Por F. C. Arrillaga. Paper Pp 274, with 53 illustrations. Buenos Aires, 1925.

Medicolegal

Expert Testimony—Statements to Examining Surgeon

(Johnson v. Bangor Ry. & Electric Co. (Me.), 131 Atl. R. 1)

The Supreme Judicial Court of Maine, in overruling the defendant's motion for a new trial after the plaintiff had obtained a verdict for damages for personal injuries, says that it was contended that the evidence so greatly preponderated in favor of the defendant that the court should be satisfied that the jury manifestly had erred, and that the damages were excessive. The argument was confined largely to the proposition that the jury had not given sufficient weight to the medical testimony in the light of the plaintiff's condition before the accident. It was conceded by medical experts on both sides that at the date of the injury the plaintiff was suffering from arthritis deformans. Still the writ alleged, and the medical testimony for the plaintiff tended to show, that he had sustained a fracture of the tenth dorsal vertebra. But the witnesses for the defendant denied that there were any indications of such fracture, and the defendant contended that the plaintiff had suffered no permanent injuries on account of the accident.

In considering a case so presented, it must be borne in mind that the testimony of the expert witnesses is only an expression of opinion, and is received on the theory that their special learning and skill may render their opinions of service to the jury; that thus the jury may obtain some assistance not otherwise available. The evidence may be stated as an assertion in the negative, as when a witness, examining a roentgen-ray film of the plaintiff's back, taken by another than the witness, asserts that he perceives no indication of a fracture; yet the testimony is but the expression of the witness' opinion, his interpretation of what this highly scientific aid to diagnosis shows; and its accuracy, or the weight to be given to it, is quite dependent on the skill of the operator who took the film, and the clearness which he obtained, as well as on the witness' own scientific skill. The assistance which testimony of this character—the court refers to expert testimony in general—may afford is, like other testimony, wholly for the consideration of the jury. The members of the jury may fairly come to the conclusion that none of it, or a part only, is entitled to weight in their deliberations. The testimony in this case well illustrated the limitations in the value of testimony of this kind. It was apparent that, after listening to the extended recital of the views of the expert witnesses, the jury did not lose sight of the fact that the plaintiff was seriously injured, a fact which it was fully justified in finding, without undertaking to determine the precise injury, if it believed the evidence submitted in his behalf. So finding, this court cannot say that the jury manifestly erred in the award of damages.

A witness called as an expert surgeon to testify in behalf of the plaintiff had examined the latter at the request of his attorneys in order to give an opinion relative to his injuries. The witness was allowed to state: "He described his accident, much as he has here. . . . Mr. Johnson's accident, as he described it to me, had been one in which he had been pitched onto his head and shoulders and his legs had been doubled up. . . ." The defendant objected to the admission of what the plaintiff told the surgeon relative to the happening of the accident, on the ground that the plaintiff's statement of such matters to the surgeon, who was examining him with a view to testifying as an expert witness and not for the purpose of treatment, was not admissible in evidence; but the evidence was admitted subject to the objection. It may be assumed that the surgeon's examination was made at some time subsequent to the injury, and that whatever the plaintiff said to him was narrative of a past event. Such statements by the plaintiff were clearly inadmissible as evidence of the facts stated. But it was very clear that the surgeon did not make the statements objected to for any such purpose. He examined the plaintiff that he might be in a position to give an opinion as to his injuries. It was very desirable, perhaps necessary, that he should obtain a history of the case. If the history which he obtained coincided with the facts as proved by competent evidence, his opinion would be entitled to a certain degree of weight; if his opinion was based on an erroneous history of the case, the basis of his opinion fell, and his opinion became of less weight. The exception, which is overruled, did not disclose an instance in which the plaintiff was endeavoring to support his case by incompetent evidence of the substantive fact which he alleged, under the guise of fortifying the opinion of an expert.

Death from Peritonitis After Injury to Hip and Leg

(Martin's Case (Me.), 130 Atl. R. 857)

The Supreme Judicial Court of Maine, in dismissing an appeal from an award of compensation by the chairman of the industrial accident commission, says that the husband of the claimant fell and received one or more traumatic injuries. Later, peritonitis developed, from which death resulted. The injuries set forth by the claimant in her petition as having resulted from the accident were to the hip. The evidence, however, also disclosed a cut or abrasion below the knee. There was no open wound at the hip. Against the award it was urged that it was not made sufficiently clear by the evidence to take it out of the realm of conjecture that the peritonitis, which was the immediate cause of death, was the result of the accident and not of disease. However, two reputable physicians, who attended the man during the last three weeks before his death while in a hospital, and who made careful examinations to determine the nature of the infection, performing an abdominal operation and after death a necropsy, gave as their unqualified opinion that the infection was not the result of typhoid fever or of other so-called internal causes, but was the direct result of the accidental injuries received. It may appear to the layman that the inference that the infection resulted from the injury to the hip was not a reasonable one, as there was no open wound as a source of infection; but one of the attending physicians gave it as his opinion that the injury below the knee was the original source of the infection. The case, however, was fully heard on evidence as to both injuries and their relation to the infection which resulted in the employee's death, and the court thinks that the chairman's findings had some competent evidence to support them, wherefore the appeal was dismissed.

Evidence Concerning Abortion by Former Physician

(Max v. People (Colo.), 240 Pac. R. 697)

The Supreme Court of Colorado, in affirming a judgment of conviction of defendant Max, says that he was sentenced to the penitentiary for a term of not less than twenty nor more than thirty years on a verdict of guilty of second-degree murder committed by performing an abortion which caused the death of a certain girl. He contended that there had been an erroneous admission of evidence. But to the general rule that evidence of independent crimes is inadmissible there are certain well recognized exceptions, one of which is that such evidence is admissible to show intent. Nor does the court know of any such rule in Colorado as that such evidence is inadmissible because it is the rule in the state that exceptions in a criminal statute need not be negatived. The mere fact that the people are not required to negative the exceptions does not make it error for them to do so, either in the charge or in the proof. Hence the admission of evidence that the defendant performed an abortion on another person ten days before he performed the one in question was proper to prove intent.

Another exception to the general rule is recognized when the plan or design of the accused is material because the specific act charged is a part of such plan or design and the proof of the latter has a strong tendency to establish the former. This defendant was charged with abortion, an offense ordinarily committed by one having some skill in certain branches of surgery. He had been admitted to practice, and had practiced medicine and surgery, and presumably had the required skill. His license had been revoked for the very offense here charged. Years afterward he was found still in the city, maintaining an office with equipment for practice, and especially equipped to perform abortions, and only a few days before the date alleged in the information he was found committing the same kind of crime The court thinks that the instant case thus clearly came within the exception which permits the proof of other offenses to show plan or design.

Under another general rule, mere memoranda are inadmissible in evidence, but an exception to this rule is recognized when such memoranda form part of the transaction which they tend to characterize and explain, and thus become a part of the res gestae (essential circumstances of the case) Therefore, when the defendant, in preparing to meet the charge against him, employed a man to manufacture evidence and the man, in the course of that employment, kept memoranda relating to the defendant's instructions to him, his execution thereof, and his reports thereon, the memoranda were admissible in evidence as a part of the res gestae of the conspiracy which the people were presenting to the jury as a part of their proof of the defendant's guilt. Then, most of the evidence of preparation for the abortion and the visit of the girl to the office of the defendant on the date in question for the purpose of its performance was given by a woman with whom the girl lived, and consisted principally of the recitation by the witness of statements made to her by the girl. This evidence was clearly admissible.

The admission of evidence that the defendant's license to practice medicine had been taken from him and not restored was said by his counsel to be an attack on his character, and prejudicial error, because the defendant had not put his character in issue. This evidence was offered generally, and the only objection to it was that it was incompetent, irrelevant and immaterial. Hence, if admissible for any purpose, there was no error. If this court is correct in its first conclusion, then this evidence was admissible to negative the statutory exceptions, being proof that the defendant, if he performed the operation, could not have done so as "a physician or surgeon." Moreover, the very fact that one who keeps a physician's and surgeon's office, equipped with surgical instruments, especially instruments used in procuring abortions, and is visited by women seeking that service, has been a practicing physician and surgeon, but has been deprived of his license because of an illegal abortion, is, in the light of the established facts in the instant case, evidence tending to prove guilt. This office, these instruments, the other abortion referred to, the visit and purpose of the girl, all might be innocent of offense if relating to the conduct of one lawfully practicing medicine and surgery; but, relating to the conduct of one lawfully prohibited therefrom, they spell crime.

Taxation of Hospital's Separate Home for Nurses

(Johnson v. Mississippi Baptist Hospital (Miss.), 106 So. R. 1)

The Supreme Court of Mississippi, division B, in reversing a decree rendered for the complainant hospital, says that it was error to overrule the demurrer which Johnson, city tax collector, filed to the bill in which the complainant asked for an injunction against him to prevent a sale for taxes of certain lots on which was situated a house owned by the complainant and used in housing nurses in the employment of the hospital. Section 4251 of the code of 1906 provides that the following property shall be exempt from taxation: "(*d*) all property, real or personal, belonging to any religious or charitable society, and used exclusively for the purpose of such society and not for profit"; "(*f*) property appropriated to and occupied and used for any hospital or charitable institution." But when a hospital maintains a home for nurses who are employed in the service of the hospital, where they live when not on duty, which home for nurses is situated on a separate lot or on separate lots from that on which the "hospital" building is located, and such home for nurses is not used exclusively for the purposes of such hospital within the meaning of section 4251 (*d*), such property is subject to taxation. Nor is such property, used as a home for nurses, exempt from taxation under section 4251 (*f*).

Furthermore, although the hospital gives to such nurses employed by it a course of instruction in the proper nursing and treatment of patients, such property, used as a home for nurses, is not exempt from taxation under section 4252, which provides that all the property belonging to any religious or charitable society, where no dividends are declared and where the revenues thereof are used for benevolent purposes, shall be exempt from all state county and municipal taxes. Nor is such property used as a home for nurses, exempt from taxation under the provision of chapter 134 of the laws of 1922 that all property belonging to religious or charitable or benevolent organizations, which is used for hospital purposes and which maintains one or more charity wards that are for charity patients, and where all the income from said hospital is used entirely for the purposes thereof and no part of the same for profit, shall be exempt from all taxation.

In this court's view, the maintaining of a home for the nurses employed by the hospital and for other employees of the hospital is not a hospital purpose within the meaning of the statute The statute contemplates such uses as are reasonably necessary to an effective discharge of the powers and duties of the hospital under its charter powers. It is not necessary, for the proper operation of a hospital, that the corporation should furnish homes for the nurses when not on duty They are no different from other people who work and pay for board and lodging or furnish their own homes when off duty and performing no service necessary for the proper operation of a hospital. It would be an unwarranted distinction, by construction of the language of the statute, to hold that buildings used merely as a rooming house for employees come within the meaning of the statute. Therefore the court is of the opinion that the home for nurses and the lots on which it is situated, here under consideration, are subject to taxation.

Expenses of Health Officers in Attending Conventions

(Miller, State Revenue Agent, v. Tucker et al (Miss), 105 So. R. 774)

The Supreme Court of Mississippi says that the state revenue agent sued the defendants as members of the board of supervisors of Warren County to recover, on their several bonds, various amounts alleged to have been paid by the board without legal authority therefor. One item involved was an allowance of $222.26 to a physician, in December, 1920, as county health officer, for a trip to Washington to attend some meeting of a professional nature there. It was contended by the defendants that the warrant was properly allowed to the physician because it fell under the jurisdiction of the board under that clause giving the board jurisdiction "of all matters of county police" The court, however, thinks that the chancellor properly allowed the revenue agent to recover this item, and it affirms his action in reference thereto. The board of supervisors have no authority to pay the county health officer's expenses in attending conventions outside the county, and the board of supervisors are liable on their bond for an allowance for such officer for such purpose.

"Entirely Without Understanding"

(Fleming v. Consolidated Motor Sales Co. et al. (Mont.), 240 Pac. R. 376)

The Supreme Court of Montana says that the phrase "entirely without understanding," as used in section 5683 of the code of that state, which provides that "a person entirely without understanding has no power to make a contract of any kind," is construed, not as requiring proof of an entire lack of understanding on any subject, i. e., that the mind of the person is an absolute void, but such a degree of mental deficiency as to render him incapable of understanding a transaction of the nature involved. Proof that a person is of "unsound mind" is not sufficient to establish that he is "entirely without understanding," as the phrase is interpreted. Furthermore, if the purchase of a car which he did not need would brand a person as one "entirely without understanding," most of us have placed ourselves in the same category. In the absence of entire lack of understanding, and in the absence of fraud or imposition, there is no degree of mental weakness on the part of either of the contracting parties recognized in the law as vitiating a contract. The law does not presume to make a distinction between much and little intellect.

Society Proceedings

COMING MEETINGS

American Association of Industrial Physicians and Surgeons, Philadelphia, May 24 26. Dr. F. L. Rector, 22 East Ontario Street, Chicago, Secretary.
American Bronchoscopic Society, Montreal, Canada, May 29. Dr. Henry B Orton, 671 Broad Street, Newark, N. J., Secretary
American Child Health Association, Atlantic City, May 17-22. Dr. S. J. Crumbine, 370 7th Ave , New York City, Secretary.
American Dermatological Association, Philadelphia, May 27-29 Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.
American Gynecological Society, Stockbridge, Mass , May 20 22. Dr. A H. Curtis, 104 S Michigan Ave , Chicago, Secretary.
American Laryngological Association, Montreal, Canada, June 3 5. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological, and Otological Society, Montreal, Canada, May 31-June 2. Dr. Robert L. Loughran, 145 West 58th Street, New York, Secretary
American Neurological Association, Atlantic City, June 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.
American Ophthalmological Society, Hot Springs, Va., June 14 16. Dr Emory Hill, Prof [illegible] Richmond Va , Secretary.
American Orthopsychiat [illegible] y, June 5 6 Dr. Karl A. Menninger, [illegible] sas, Secretary.
American Otological Sc [illegible] 31-June 3 Dr. Harold Walker, 390 [illegible] Secretary
American Pediatric So [illegible] May 31 June 2. Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia, Secretary
American Psychiatric Association, New York City, June 8-11. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.
American Psychopathological Association, New York City, June 11. Dr. Sanger Brown II, 173 East 70th Street, New York City, Secretary.
American Roentgen Ray Society, Detroit, May 18-22 Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.
American Surgical Association, Detroit, May 24 26 Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary
American Therapeutic Society, Philadelphia, June 10 12. Dr. W. J. Mallory, 1720 Connecticut Ave , N. W., Washington, D. C , Secretary.
American Urological Association, Boston, May 17-19. Dr. H. G. Hamer, 723 Hume Mansur Building, Indianapolis, Ind , Secretary.
Arkansas Medical Society, Hot Springs, May 18 20. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary.
Conference of State and Provincial Health Authorities, Atlantic City, N. J , May 21 22 Dr. Richard M. Olin, State Commissioner of Health, Lansing, Mich , Secretary.
Connecticut State Medical Society, New Haven, May 19 20. Dr. C. W. Comfort, Jr , 27 Elm Street, New Haven, Secretary.
Illinois State Medical Society, Champaign, May 18-20. Dr. H. M. Camp, Lahl Building, Monmouth, Secretary.
Maine Medical Association, Poland Springs, June 10-12. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Springfield, June 8 9. Dr. W. L Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Library Association, Ann Arbor, Mich , June 8 9. Miss Harriet Wilson, 535 North Dearborn Street, Chicago, Secretary.
Minnesota State Medical Association, St. Paul, May 17-19. Dr. E. A. Meyerding, 11 W. Summit Avenue, St. Paul, Secretary.
Missouri State Medical Association, St Louis, May 17-20. Dr. E. J. Goodwin, 901 Missouri Building, St Louis, Secretary.
National Association for the Study of Epilepsy, New York City, June 7 8. Dr. A L Shaw, 108B The Albiston, Utica, N. Y., Secretary.
New Hampshire Medical Society, Concord, May 25-26. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 17-19. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
New Mexico Medical Society, Albuquerque, May 19 21. Dr. C. M. Yater, 310 N Richardson Avenue, Roswell, Secretary.
North Carolina, Medical Society of the State of, Wrightsville Beach, June 15 17. Dr. L. B McBrayer, Southern Pines, Secretary.
North Dakota State Medical Association, Minot, May 25-26. Dr. A. J. McCannel, Minot, Secretary.
Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C A Thompson, 609 Barnes Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
South Dakota State Medical Association, Aberdeen, May 19-20. Dr. John F. D Cook, Langford, Secretary.
Texas, State Medical Association of, Houston, May 24 27. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.
West Virginia State Medical Association, Morgantown, May 25 27. Mr S. O. Neale, 211 Smallridge Building, Charleston, Executive Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Twentieth Annual Meeting, held at New York, March 30 April 1, 1926

(Continued from page 1478)

Etiology of Postoperative Pneumonitis

DR ALLEN O. WHIPPLE, New York: There are three fairly well defined pathologic processes in the production of postoperative pulmonary complications: (1) aspiration of infected secretions; (2) pulmonary infarction, and (3) atelectasis. No one of these three processes can be considered as the sole etiologic factor. In 1915-1916, at the Presbyterian Hospital, the incidence of pneumonitis was 2 3 per cent in 3,217 operative cases; in 1924 it was 2 per cent, and in 1925 it was 1.4 per cent. This is in large measure due to the fact that we have advised consistently against abdominal operations during the late winter and spring when respiratory infections are most prevalent. These figrues show that elimination of respiratory infection before the abdominal operation is not to be overlooked.

DISCUSSION

DR. WILLIAM D. JOHNSON, Batavia, N. Y.: With regard to the factors in the production of postoperative pulmonary complications, I feel just the way Dr. Whipple does, that no one thing is to be given great predominant consideration. If a patient comes in who has been in the habit of wearing his underwear to bed, we will let him do it. Many years ago I was told that the way to avoid postoperative pneumonia was to put on a mustard plaster as soon as the patient was back in bed, and that is routine. In every case of abdominal operation a jacket of mustard is put on until the skin gets as red as a baby's lips. The portable roentgen-ray machine will tell if there is massive collapse of the lung, which occurs in a greater percentage of cases than one thinks. We have made it a routine to make a roentgen-ray examination with the portable machine as soon as the patient is awake in cases in which we suspect massive collapse. The patient with actual massive collapse of the lungs is got up into a chair within twenty-four hours of the time of the operation and made to breathe deeply. My anesthetist is afraid of deep anesthesia, and I of light anesthesia. As a result of all these things, we have not had a case of massive collapse in the last year. Prevention is the important thing.

DR. WILLY MEYER, New York: One of the elements causing postoperative pneumonitis and very frequently death is aspiration, which occurs sometimes during operation even in the hands of an expert, and particularly toward the end of the operation and right after it during the return of the patient to bed. For many years we have insisted on placing the patient on the stretcher in a pronounced Sims posture. When he then vomits, aspiration cannot occur; the gastric contents must run out the lower angle of the mouth. The patient is placed in the same position in bed, provided there is no contraindication. In Bier's surgical clinic in Berlin, investigation has been made on patients suspected of developing lung complications. They take 8 minims (0 5 cc.) of ether, mix it with 8 minims of sterile oil and a few drops of a local analgesic, and inject it into the gluteal muscles once in twenty-four hours, from three to five days in all. As in colonic anesthesia, the ether is bound up with oil and given off slowly in the body—a better procedure than to inject plain ether. The result is a mild hyperemia of the bronchial mucosa, which represents the curative agent. Of 187 patients just beginning to show lung complications, 185 did not develop pneumonia.

DR. HENRY KELLER, New York: One of the important measures in the treatment of postoperative pneumonitis, as well as an effective preventive of pneumonitis as a postoperative complication, is the application of diathermy to the chest region. In robust patients the diathermy pads can be applied soon after the operation is completed, and as soon as the patient is returned to bed the pads and the application of the current can be continued for a number of hours. On the other hand, in cases considered bad surgical risks, the application of diathermy can be commenced prior to the operation, and continued during the operation and for a number of hours following the operation.

DR. JOHN A. LICHTY, Clifton Springs, N. Y.: In considering cases of postoperative pneumonitis there should be active team work on the part of surgeon, internist and pathologist. I believe that the diagnosis of postoperative pneumonitis is made more frequently than it should be. Statistics on postoperative pneumonitis are misleading unless the diagnosis is verified by a necropsy. With reference to the prophylactic treatment against postoperative pneumonia, the suggestions given by Dr. Whipple and Dr. Johnson are interesting and yet I believe it is difficult to determine just how much good all these procedures and findings accomplish, largely because in the various epidemics of colds, grip, etc., which are characterized by the frequency of postoperative pneumonitis, the character of the micro-organisms differs. Any measures that might have to be instituted when the epidemic is mild might show good results, whereas a much better method instituted when the epidemic is severe might not give as good results as it would otherwise.

Dr. Malcolm Rose, New York: Drowning people with ether has a good deal to do with putting their lungs in good condition for the development of pneumonia.

Dr. Allen O. Whipple, New York: An important prophylactic measure to be used against the development of pulmonary emboli is careful handling of the tissues, avoiding injury of the large venous channels in such areas as the rectus muscle. I agree that the majority of statistics on the subject are not of a great deal of use. I am glad to hear that you cannot demonstrate all these cases by necropsy. I think ether has been blamed entirely too much for these complications and that the term "ether pneumonia" is a misnomer.

Pulmonary Abscess and Its Treatment

FROM THE SURGICAL STANDPOINT

Dr. Adrian V. S. Lambert, New York: The crux of the successful treatment of lung abscess may be summed up by the one word drainage, and in the management of any given case the problem is to effect adequate drainage. In our entire series of cases about 50 per cent of the patients recovered completely under the more conservative forms of treatment without operation. The exact time at which to drain a lung abscess through the chest wall is when the zone of exudative inflammation has been reduced to a minimum and the central cavity is surrounded by a series of collapsed vesicles, representing a more or less discrete wall. It is most important to establish its exact location with accuracy and, if possible, the point at which it is nearest the chest wall. Abscesses situated near the hilum are the most difficult to drain by incision, but fortunately recovery usually occurs without operation. The use of the aspirating needle on the unopened chest in order to establish the diagnosis is an unjustifiable procedure, because of the danger of establishing an empyema. After the abscess has been opened, it should be explored with the finger and the opening enlarged so that the drainage may be placed at its most dependent portion. As a drain I use a collapsed cigaret drain covering without any contained gauze and place a rubber tube of large caliber and soft texture just inside the abscess wall, leading the cigaret covering to the surface through its lumen. The incisions of the superficial layers of the chest wall are packed with iodoform gauze about the tube. This acts as an excellent protective against infection. The patient is kept on his operated side until he has completely established his respiratory equilibrium and emptied his bronchial tree of contained secretion. Drainage must be maintained until the roentgen ray shows a complete clearing of the surrounding lung and a granulating tract is established.

FROM THE MEDICAL STANDPOINT

Dr. James Alexander Miller, New York: In the treatment of pulmonary abscess, absolute rest is extremely important, not only during the time when the patient has fever, but afterward. Within a week or so, if the patient is in bed, even though the amount of expectoration is considerable, the fever will subside and the patient is better. This rest in bed during the whole period of the suppurative process is of extreme importance. While the patient is kept at rest, we try to facilitate drainage by the use of posture. We invert our patients over the foot of the bed, with the hands on the floor, so that the abscess side is up. The logical position is not always the one in which the patient drains best, and we have to experiment to find which is the best way. A patient will be relieved for several hours by emptying the abscess by this posture. This is carried out three or four times a day. This, in connection with absolute rest in between, is our fundamental treatment for a period of time sufficient to demonstrate whether or not additional methods are necessary to cure the patient. If the patient does not do well on a regimen of rest and posture, the question of bronchoscopy is considered. We do not agree that bronchoscopy is in all cases of abscess the method that should be tried immediately, because it is not as simple and harmless a thing as it is sometimes described to be. Another method of treatment which we have used and which is widely discussed in the literature is artificial pneumothorax. We have not had favorable results with it in pulmonary abscess. The treatment may do real harm either by rupturing adhesions, and thus causing acute empyema, or by compressing the draining bronchus, thus cutting off the drainage.

DISCUSSION

Dr. Howard Lilienthal, New York: It may possibly be necessary in treating multiple abscesses of the lung to use thoracoplasty. Fifty per cent of these patients will get well spontaneously, but the remaining 50 per cent will die if not operated on, and operated on at the right time. But this does not mean that the ordinary lung abscess is a question of an emergency. It usually is not. If one makes the diagnosis before there is a bronchial connection, and then operates, the patient will recover very promptly, because every expulsive respiratory effort tends to force the abscess walls together. When an abscess is opened and is found to connect with a part of the bronchial tree, it is best to maintain the bronchial fistula for a long time. Operative dangers not detailed are: hemorrhage from erosion of vessels and cerebral air embolism. This is probably the cause of what is called pleural shock. Postoperative rest is of great value.

Dr. John D. Kernan, New York: Bronchoscopy should be done at least once in every case of lung abscess on account of the possibility of the presence of a foreign body, and because of the possibility of a cure after one bronchoscopy. No matter how unfavorable the case appears for bronchoscopy, it is sometimes possible to get astounding results.

Bronchopulmonary Spirochetosis

Dr. David T. Smith, Ray Brook, N. Y.: In the nineteen cases seen at Ray Brook, spirochetes, fusiform bacilli and cocci have been found in every case. Many more cases must be studied, and the organisms must be isolated in pure culture and the disease reproduced in animals before it can be said definitely that they are the etiologic agents. The routine method of treatment in these cases has been rest in bed and postural drainage. During the last year, injections of neoarsphenamine have been given in addition, with improvement in some cases. The success of the treatment depends largely on the duration of the disease. Most of the cures have been obtained in cases of less than six months' standing.

Chronic Pancreatitis

Dr. J. William Hinton, New York: Cases of chronic interstitial pancreatitis are not cured, nor are subsequent attacks prevented, by biliary drainage, as the symptoms are due to a lymphatic infection secondary to a primary abdominal focus, most often a lesion of the gallbladder, and second, an ulcer of the duodenum. The diagnosis should be made in a higher percentage of cases from the history and clinical data without an exploratory laparotomy. The infection seems to be a lymphangitis which spontaneously subsides after removal of the primary abdominal focus.

DISCUSSION

Dr. Charles Gordon Heyd, New York: The statistics furnished by all large clinics on the association of pancreatitis with gallbladder infection would support the assumption that this association does exist. It would appear logical, therefore, to suppose that there must be symptoms produced by a chronic pancreatitis which remain after the original focus of infection has been removed. Most of the cases of residual pancreatitis clear up spontaneously within a reasonable time without the necessity for any further operative intervention.

Dr. Anthony Bassler, New York: The test I devised will show with very little liability of error if a definite condition in the pancreas exists by the simple method of testing the external secretions. We judge our operative cases entirely on the results of this test, and even in chronic cholecystitis we have been able to get a very high percentage of definite stiffening in the pancreas found at operation; and in those cases in which there is a chronic cholecystitis with stiffness there is no question that the gallbladder should be removed. The method is also helpful in operative cases which come back with symptoms to draw attention to the involvement of the pancreas and the relief of those symptoms by various methods of pancreatic feeding.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

171: 157-312 (Feb.) 1926

*Vascular Changes in Cases of Polycythemia Vera. G. E. Brown and H. Z. Giffin, Rochester, Minn.—p. 157.
Experimental Coronary Embolism. W. W. Hamburger, W. S. Priest and R. B. Bettman, Chicago.—p. 168.
*Spontaneous Rupture of Heart. F. R. Nuzum and H. J. Hagen, Santa Barbara, Calif.—p. 185.
*Subacute Combined Degeneration of Spinal Cord and Pernicious Anemia. H. H. Reese and S. K. Beigler, Madison, Wis.—p. 195.
Pressure Changes in Biliary Tract. J. C. Potter and F. C. Mann, Rochester, Minn.—p. 202.
*Substernal Thyroid. D. Felberbaum and B. Finesilver, New York.—p. 217.
*Prognosis in Exophthalmic Goiter. J. M. Read, San Francisco.—p. 227.
*Total Thyroidectomy in Thyrotoxicosis of Exophthalmic Type. P. K. Gilman and W. E. Kay, San Francisco.—p. 239.
Diagnostic Criteria of Chronic Parathyroid Insufficiency: Phosphate Content of Blood. L. Berman, New York.—p. 245.
*Primary Carcinoma of Lung. J. S. Grove, Chicago, and S. E. Kramer, Perth Amboy, N. J.—p. 250.

Vascular Changes in Polycythemia Vera.—Fourteen cases of polycythemia vera were studied by Brown and Giffin in relation to the vascular readjustments to the increased volume of the circulating blood. The total volume of the circulating blood and its viscosity were increased in all cases. The capillaries of the nail fold showed engorgement of the venous limb in thirteen cases; of the arterial limb, in four cases. There was complete utilization of all available capillaries of the skin. Engorgement of the retinal veins was present in nine cases. Cardiac enlargement and cardiac disease were noticeably absent. The liver was slightly enlarged in 57 per cent of cases. The spleen was enlarged in every instance, and there was a distinct relationship between the splenic enlargement and the degree of increase in the total volume of the blood. There was no increase of blood pressure in polycythemia vera. The renal function was slightly impaired.

Spontaneous Rupture of Heart.—Nuzum and Hagen have collected 320 instances of heart rupture from the literature and add five cases from their own material, classifying the symptoms according to their incidence and giving particular attention to the etiology and pathology. They assert that this condition most frequently follows obstruction of a coronary artery. Coronary thrombosis invariably results in infarction of that portion of the heart wall supplied by the obstructed vessel. Proper management of such a patient will aid in preventing a rupture of the infarcted area.

Pernicious Anemia and Spinal Cord Degeneration.—At least four of the cases of pernicious anemia reported by Reese and Beigler presented some form of neurologic manifestation. It appears that the loss of vibratory sense is almost invariably the earliest sign of neural changes in pernicious anemia, and not infrequently a diagnosis of the disease and subsequent development of cord changes were predicted in spite of a normal blood picture. Cord changes may precede the characteristic blood picture of pernicious anemia, and in such cases the progress of the disease is more rapid, remissions are less frequent and prognosis more serious. Neurologic manifestations are apparently limited to the cord, particularly involving and causing marked tract degeneration of the spinocerebellar and posterior column tracts.

Substernal Thyroid.—Felberbaum and Finesilver call attention to the frequency of occurrence of substernal thyroid and report seven cases. Any shadow in the upper mediastinum, which shows a distinct line of demarcation, and is separate from the aorta, is usually a retrosternal goiter.

Prognosis in Exophthalmic Goiter.—The mortality rate in Read's series of 100 cases was 11 per cent. Exclusive of four deaths directly due to surgery, the mortality rate was 7.3 per cent, and, further deducting three accidental deaths, it was 4.3 per cent. Thirty-eight per cent of patients seem to be cured and about 21 per cent are sufficiently improved as to be restored to full social and economic usefulness. The remaining 30 per cent, which includes twenty-three of twenty-five patients previously operated on, will be sufferers from the disease or its sequelae the remainder of their lives. The tendency for this disease to become chronic in certain instances is a feature which Read feels had not been stressed sufficiently.

Total Thyroidectomy in Exophthalmic Thyrotoxicosis.—Ten patients form the basis of the preliminary report made by Gilman and Kay. Of these, seven had been under continuous medical supervision, including the usual methods indicated by that term, for from one to eight years. Each of these seven had received numerous roentgen-ray treatments, two patients as many as sixty treatments. The operation consisted in removing the entire thyroid gland, the safety of the parathyroids and recurrent laryngeal nerves being insured by shaving the posterior portion of each lateral lobe as close to the capsule as possible. All but two patients received iodine both before and after operation. The results have been most gratifying. After long periods of complete invalidism the patients have resumed their usual occupations and enjoy good health.

Primary Carcinoma of Lung.—Twenty-four cases of primary carcinoma of the lung are analyzed by Grove and Kramer. The striking increase in the number of tumors of the lung since the influenza epidemic suggests some relation between these two conditions. Pulmonary cancer presents a very varied pathologic picture. Metastases occur early and are very widespread. Histogenesis presents many difficulties, because of the morphologic variations in the cells concerned and the difficulty in obtaining the tumors in the early stages for study. Efforts to classify these tumors as to histogenesis admit great probability of error. However, from authentic studies it appears that origin from bronchial mucosa is most frequent and that origin from alveolar epithelium is very rare. There are no pathognomonic symptoms of tumor of the lung—weakness, cough, expectoration, pain in the chest and dyspnea being most important. The use of the bronchoscope for both diagnosis and treatment is advocated.

American Journal of Syphilis, St. Louis

10: 1-200 (Jan.) 1926

Sudden Death Due to Exacerbation of Latent Syphilitic Myocarditis. A. S. Warthin, Ann Arbor, Mich.—p. 1.
*Bismuth Treatment for Syphilis. I. C. Sutton, Los Angeles.—p. 29.
Generalized Cutaneous Syphilis: Clinical Differentiation. III. Frambesia Tropica and Syphilis. H. Goodman, New York.—p. 64.
*Acute Syphilitic Nephritis: Case. A. J. Hood and F. D. Murphy, Wauwatosa, Wis.—p. 89.
Case of Cerebrospinal Syphilis Treated by Inoculation with Malarial Parasites. E. C. Thrash, Atlanta, Ga.—p. 94.
*Pregnancies as Factor in Prevention of Neurosyphilis. H. C. Solomon, Boston.—p. 96.
Standardization of Wassermann Test. R. Gilbert and V. Langworthy, Albany, N. Y.—p. 101.
Sachs-Georgi Reaction. G. Stuart and K. S. Krikorian, Palestine.—p. 131.
Wassermann Test for Syphilis: Natural Antisheep Amboceptor in Human Serum. O. Ishii, New York.—p. 143.
Comparison of Fixation at 37 C. and 36 C. with Cholesterinized Antigen. R. Gilbert, V. Langworthy and A. C. Moore, Albany, N. Y.—p. 162.

Bismuth Treatment of Syphilis.—Sutton concludes that bismuth has not dethroned arsenic, which still holds first place because of its powerful action on spirochetes, but it is particularly indicated in cases of intolerance to the arsenical preparations and in those who may be said to be arsenic fast. It constitutes, therefore, "a great progress in the treatment of syphilis."

Acute Syphilitic Nephritis.—The case reported by Hood and Murphy appears to be one of true syphilitic nephritis, because it occurred during the secondary stage of untreated syphilis, and no other known cause for the nephritis could be found.

Pregnancy as Factor in Prevention of Syphilis.—The history of pregnancy in 559 syphilitic women, 30 years of age or older, was studied by Solomon. About 44 per cent of the women with paretic and tabetic neurosyphilis were nullipara in comparison with 26.5 per cent of nullipara among the women who had syphilis but no evidence of nervous system involvement. Pregnancies were considerably more frequent among the nonnervous system syphilitic patients than among the neurosyphilitic patients. Solomon says that one might draw either of two conclusions: first, that women who develop neurosyphilis become less fertile than women infected with syphilis but without central nervous system involvement, either because the former have a more severe type of infection or because they are infected with a different type of organism, namely, a neurotropic strain which tends to affect the childbearing potentialities of the individual; or, second, that women who become pregnant receive thereby a protection against the spirochete and its attack on the nervous system.

Annals of Surgery, Philadelphia

83: 321-448 (March) 1926

*Invasion of Intracranial Venous Sinuses by Meningioma (Dural Endothelioma). E. B. Towne, San Francisco—p 321
*Giant Cell Tumor Involving Phalanges W H Cole, St Paul—p 328
Periarterial Sympathectomy: Three Cases in Which It Failed N Winslow, Baltimore.—p. 333.
Glossopharyngeal Neuralgia and Its Surgical Relief A. O. Singleton, Galveston, Texas—p. 338
Questions Involved in Operative Procedures in Cases of Gastric and Duodenal Ulcers A. Schachner, Louisville, Ky.—p. 345
Healing of Gastric Ulcer in Man. H. D. Caylor, Rochester, Minn—p 350.
*Carcinoma of Right Segment of Colon. C H. Mayo and W A Hendricks, Rochester, Minn—p 357.
*Colonic Polyposis with Engrafted Malignancy R C. Coffey, Portland, Ore—p. 364
*Hemostasis in Suprapubic Prostatectomy. V. C Hunt, Rochester, Minn. —p 380
Arthrotomy for Knee Joint Calculi J J. Moorhead, New York—p 392
*Primary Pneumococcus Peritonitis R. A. Leonardo, Rochester, N. Y. —p. 411.

Meningioma.—Two cases are reported by Towne. In one, the superior longitudinal sinus was occluded In the second, a meningioma had invaded the inferior longitudinal sinus and grown extensively in the venous system, terminating in the superior vena cava. The tumor had secondarily invaded and broken through the venous walls in many places.

Giant Cell Tumor of Phalanges.—Two cases of benign giant cell tumor of the phalanx are reported by Cole. The first of these involved the proximal phalanx of a toe, and was cured five and one-half years after amputation The second involved the proximal phalanx of the thumb. This patient was well sixteen months after the phalanx was resected and replaced by a bone graft from the tibia, driven into the metacarpal head. The result is a stiff, but very serviceable, thumb.

Carcinoma of Colon.—In ten years, 257 patients with carcinoma of the right segment of the colon were advised to undergo operation at the Mayo Clinic. Of these, 141 are known to be dead, a few of which, however, did not die from carcinoma. Thirty-four patients were not traced Fifty-five patients lived from one to four years; twenty-five lived from six to eight years; twelve are alive from eight to nine years after operation.

Colonic Polyposis.—Coffey reports one case of colonic polyposis with engrafted malignancy and describes a technic for removing the entire colon including the rectum.

Hemostasis in Suprapubic Prostatectomy.—In Hunt's experience, the Pilcher bag offers a most effective method of hemostasis after suprapubic prostatectomy.

Primary Pneumococcus Peritonitis.—Three cases of primary pneumococcus peritonitis are reported by Leonardo, in none of which was infection by way of the genitalia possible. In one of these cases trauma was a possible etiologic factor.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 65-125 (Feb) 1926

Therapeutic Exercise: Neglected Method in Physiotherapy. J. C. Elsom, Madison, Wis—p 65
Status of Radiotherapy in Ophthalmology and Otolaryngology. I. O. Denman, Toledo, Ohio—p. 73.
Treatment of Ulcerations by Ultraviolet Ray. A Krohn, Detroit.—p 84.
Fistulas and Sinuses. M J. Breuer, Lincoln—p 94.

Arkansas Medical Society Journal, Little Rock

22: 217 228 (March) 1926

Case of Cyst of Broad Ligament R C Dorr, Batesville—p. 217.
What May Be Expected from Use of Intravenous Antiseptics in Treatment of Septicemias J Thibault, Scott—p 217
Business Side of Practice of Medicine A McLeod, Glen Allen—p 221.

California and Western Medicine, San Francisco

24: 289 432 (March) 1926

Prostatic Obstruction G G Reinle, Oakland—p 324
*Relation of Protein Foods to Hypertension. A N Donaldson, Loma Linda—p 328
*Value of Orange Juice as Accessory Food. J T. Melvin, Porterville—p 331
*Renal Counterbalance F Hinman, San Francisco—p 333
Bilharzia Disease Cure by Tartar Emetic. W. B Palamountain, Oakland—p 335
Reasons for Early Treatment of Squint M F Weymann, Los Angeles. —p 339
Radiotherapy of Nonmalignant Conditions F. Williams, San Francisco. —p 340
Gastric and Duodenal Ulcer J A Mattison, Los Angeles—p 342
Significance of Growth Deviations in Children. C L. Lowman, Los Angeles—p 345
Skin Lesions as Diagnostic Aids in General Medicine H. J. Templeton, Oakland—p 348
Virulent Surgical Infections W H Barnes, Oakland—p 349.
Lupus Erythematosus Acutus Disseminatus F B Clarke and A. W. Warnock Los Angeles—p 354
Intestinal Protozoiasis A Bonthius, Pasadena—p 357.

Relation of Protein Foods to Hypertension.—The results of this study by Donaldson support the suggestion that hypertension may have its beginnings in a type of dietary that produces such a degree of endocrine stimulation as to develop an irritable vasomotor system with its resulting transitory, then permanent, alteration in blood pressure.

Orange Juice as Accessory Food.—Melvin believes that the regular administration of orange juice with children's meals is an important factor in their improved health, and promotes gain in weight

Renal Counterbalance.—Hinman says that it is a popular conception that the remaining kidney, if normal, is able immediately to take over the extra burden occasioned by removal of its mate On closer consideration this is found to be only partially true, and renal reserve is seen to be largely potential and to have an anatomic and functional correlation Studies of structure have shown that growth by hyperplasia or new tissue formation may occur in young animals and man for considerable periods after birth; in human kidneys, up to the fifth or sixth year. Renal atrophy has been almost universally regarded by pathologists as degenerative in type and due to bacterial, chemical or other toxins, producing the well recognized pathologic condition of cloudy swelling, and fatty amyloid and hyaline degeneration But there is also a well recognized type of atrophy which may be termed biologic, due to inanition, pressure or inactivity, and it is possible experimentally to produce what would seem to be an inactivity renal atrophy. For clinical purposes, one may distinguish four groups of renal tissue relative to the adjustments that may follow surgery or disease. Readjustments between these four types of tissue lead to four types of counterbalance The normal renal tissue may show a complete unilateral counterbalance. Readjustments among portions which have an equal qualitative ability to respond instance a cooperative type of counterbalance, whereas readjustments between portions of unequal qualitative ability, irrespective of quantity mass, result in a competitive type of counterbalance.

Illinois Medical Journal, Oak Park

49: 89 176 (Feb) 1926

Prophylactic Blood Transfusion as Routine Measure in Poor Operative Risks G G. Ward, New York—p. 101.
Interests of Medical Profession Now Before Our State Legislature. J R Neal, Springfield—p. 103.
Case of Ovarian Pregnancy with Histologic Findings. M. Thorek, Chicago—p. 106
Idiopathic Ulcerative Colitis. A. H. Logan, Rochester, Minn.—p 111.
Acute Lymphatic Leukemia: Relation to Minor Surgical Procedures; Case H. J. Isaacs, Chicago—p. 116.
Managements of Peptic Ulcer, Gastric and Duodenal. A. E. McEvers, Rock Island.—p. 118
Diathermy in Genito Urinary Diseases. V. J. O'Conor, Chicago.—p. 123.

Some Things Public Ought to Know About Scientific Medicine. Why Not Tell Patient About Disease That Kills Him? W. F. Grinstead, Cairo.—p. 125.
Nervous Patient and General Practitioner. M. Solomon, Chicago.—p. 127.
Hay-Fever in Chicago Territory. H. L. Huber, Chicago.—p. 133.
Oral Mycosis: Case. D. W. Day, Rockford.—p. 138.
Is Malaria Etiologic Factor in Iritis? R. C. Matheny, Galesburg.—p. 139.
Public Health Work as Viewed by One in General Practice of Last Quarter of Century. J. S. Templeton, Pinckneyville.—p. 142.
Hemochromatosis in Woman. F. W. Moeller and J. H. Hutton, Chicago.—p. 146.
Surgical Physiology of Pancreas. W. J. Hurley, Chicago.—p. 148.
Pellagra: Case. C. G. Appelle, Champaign.—p. 150.
Treatment of Fibroids. W. C. Danforth, Evanston.—p. 152.
Prognosis of Intracranial Tumors. L. Davis, Chicago.—p. 156.
Amebic Dysentery. A. A. Goldsmith, Chicago.—p. 160.
Changing Aspects of Dermatologic Practice. E. P. Zeisler, Chicago.—p. 163.
Ludwig's Angina: Twenty-Three Cases. C. F. Yerger, Chicago.—p. 168.

Indiana State Medical Association Journal, Ft. Wayne

19: 93-134 (March) 1926

*Acute Rheumatic Fever. L. G. Heyn, Cincinnati.—p. 93.
*Volvulus of Fallopian Tube. W. E. Gabe, Indianapolis.—p. 98.
Divergent Strabismus. B. W. Egan, Logansport.—p. 101.
Pelvic Infections, Especially Salpingitis. T. J. Strong, Peru.—p. 108.
Reconstruction Work in Middle Life. S. P. Scherer, Martinsville.—p. 113.

Acute Rheumatic Fever.—In sixty cases of rheumatic fever reviewed by Heyn, there were eighty-six cardiac complications. Chronic myocarditis and mitral and aortic insufficiency were the most frequent complications, occurring in twenty-three, twenty-one and twenty cases, respectively.

Volvulus of Fallopian Tube.—Gabe reports a case of volvulus of the fallopian tube occurring in a girl, aged 15. The abdomen was opened under a diagnosis of acute appendicitis. There did not appear to be any preceding pathologic change. Gabe says that a preoperative diagnosis of this condition has never been made in reported cases.

Journal of Bacteriology, Baltimore

11: *75-151 (Feb.) 1926*

Study of Bacillus Acidophilus from Digestive Tract of Calves. M. L. Orcutt, Princeton, N. J.—p. 115.
Study of Enterococci from Digestive Tract of Calves. M. L. Orcutt, Princeton, N. J.—p. 129.
Use of Potassium Tellurite in Differential Culture Medium. R. Gilbert and E. M. Humphreys, Albany, N. Y.—p. 141.

Journal of Clinical Investigation, Baltimore

2: *213-298 (Feb.) 1926*

*Total Acid-Base Equilibrium of Plasma in Health and Disease. VII. Factors Concerning Acidosis in Chronic Nephritis. H. A. Bulger, J. P. Peters, A. J. Eisenman and C. Lee, New Haven, Conn.—p. 213.
*Extrinsic Nervous Control of Auricles and Ventricles in Complete Auriculoventricular Block in Man. A. C. De Graff and S. Weiss, New York.—p. 227.
*Effect of Changes in Regimen on Urinary Alkaline Tides in Normal Individual. M. Muschat, Philadelphia.—p. 245.
*Excretion of Ammonia and Titratable Acid in Nephritis. D. D. Van Slyke, G. C. Linder, A. Hiller and J. F. McIntosh, New York.—p. 255.
*Effect of Iodine by Mouth on Reaction to Intravenous Injections of Thyroxin. C. C. Sturgis, S. Zubiran, G. W. Wells and T. Badger, Boston.—p. 289.

Factors Concerning Acidosis in Chronic Nephritis.—Bulger and his associates are of the opinion that a reduction of total base and an increase of undetermined acids are the most significant factors causing acidosis in chronic interstitial and arteriosclerotic nephritis, phosphate playing a somewhat less important rôle. The degree of acidosis appears to be greatly influenced by variations of plasma chloride. Frequently, especially in the presence of vomiting, chloride may be quite low, thus freeing the base to combine with bicarbonate and resulting in only a slight reduction of carbon dioxide. With high chloride, bicarbonate may be extremely low. These studies emphasize the profound changes which occur in the blood electrolytes in the terminal stages of chronic nephritis.

Nervous Control in Heart Block.—Evidence is presented by De Graff and Weiss to show that in complete heart block the accelerator nerves exert a considerable control over the ventricles, whereas the vagi have only a slight influence. Vagal control over the auricles is the same in complete heart block as in the normal heart. Exercise in complete heart block tends to increase the auricular rate but leaves the ventricular rate unchanged. Cheyne-Stokes breathing in complete heart block may be associated with varying auricular and ventricular responses. A case is reported in which the injection of epinephrine caused a complete change in direction of the ventricular complexes.

Rhythm in Urinary Acidity.—The observations made by Muschat suggest a rhythm in urinary acidity characteristic for the individual and persisting in spite of marked variations in the individual's regimen.

Ammonia and Acid Excretion in Nephritis.—In those forms of nephritis (nephrosis and benign nephrosclerosis) in which the urea excreting function is quantitatively unimpaired, Van Slyke et al. found that both ammonia and titratable acid are excreted in normal amount and proportion. In acute glomerulonephritis a tendency to low ammonia-acid ratios was present in some cases, and absent in others. In those forms of nephritis with quantitatively impaired urea concentrating function (chronic glomerulonephritis and some cases of acute glomerulonephritis), there was regularly a low ammonia-acid ratio. The drop in the ammonia-acid ratio was not always proportional to the fall in urea excreting power nor to the severity of the clinical condition. The ammonia content of the blood was as low or lower in those forms of nephritis with diminished ammonia output as in normal individuals. The concurrence of diminished ammonia formation with diminished kidney function is compatible with the conclusion of Nash and Benedict that ammonia is formed in the kidney. The fall in the ratio, however, although present in all cases thus far observed with impaired urea concentrating power, does not regularly parallel the fall in the urea concentrating or excreting power. The decrease in urea function is more closely correlated with the clinical severity of the nephritis.

Effect of Iodine on Thyroxin.—Sturgis et al. assert that the intravenous injection of thyroxin in rabbits produces a characteristic increase in the pulse rate, basal metabolism and decrease in the body weight. The administration of compound solution of potassium iodide has no effect in altering the characteristic response in rabbits to injections of thyroxin.

Journal of Infectious Diseases, Chicago

38: *193-280 (March) 1926*

Bacterial Metabolism. LXXVI. Nature of Soluble Proteolytic Enzyme of B. Proteus. A. I. Kendall and H. R. Keith, St. Louis.—p. 193.
Id. A. I. Kendall, St. Louis; A. A. Day and A. W. Walker, Chicago.
  *LXXVII. Chemistry of Intestinal Flora of Nurslings.—p. 200.
  *LXXVIII. Chemistry of Intestinal Bacteria of Artificially Fed Infants.—p. 205.
  *LXXIX. Chemistry of Intestinal Flora of Normal Adults.—p. 211.
  LXXX. Chemistry of Intestinal Flora of Man Containing Abnormal Numbers of Gas Bacilli.—p. 217.
Fate of B. Typhosum and Other Organisms in Segregated Vein and in General Circulation of Normal and Immunized Rabbits. R. G. Mills and G. M. Dack, Chicago.—p. 222.
Effect of Certain Substances on Precipitin Reaction. C. M. Downs and K. Goodner, Lawrence, Kan.—p. 240.
Experimental Method for Study of Bacterial Flora of Gastro-Intestinal Tract. L. Arnold, Chicago.—p. 246.
Bacterial Flora and Hydrogen Ion Concentration of Duodenum. L. Arnold and L. Brody, Chicago.—p. 249.
Hog Cholera Studies. R. A. Whiting, Lafayette, Ind.—p. 256.
Comparative Study of Strains of Clostridium Chauvoei Obtained in United States and Abroad. J. P. Scott, Manhattan, Kan.—p. 262.
Bacterial Flora of Market Oysters. J. C. Geiger, W. E. Ward and M. A. Jacobson, Chicago.—p. 273.

Chemistry of Intestinal Flora of Nurslings.—The nitrogenous metabolism of the mixed intestinal flora of twelve nurslings was investigated by Kendall, Day and Walker. The nitrogenous changes induced by the microbes were relatively little. Proteolysis of bacterial origin was minimal. The striking change induced by the mixed flora was a pronounced fermentation of utilizable carbohydrates, particularly glucose and lactose. In these mediums, there was a rapid and intense formation of acid, with almost no indication of nitrogenous changes in the constituents of the medium other than those ultimately associated with the anabolic phase of bacterial activity. This pronounced fermentation (principally lactic) is characteristic of the chemical findings of the combined fecal bacteria of nurslings.

Chemistry of Intestinal Flora of Artificially Fed Infants.—Kendall, Day and Walker found that the intestinal floras of artificially fed children induce putrefactive changes in sugar-free mediums, and fermentative changes in the same mediums to which carbohydrates have been added.

Chemistry of Intestinal Flora of Normal Adults.—The general result obtained by Kendall, Day and Walker from the metabolic study of fairly representative intestinal floras from normal adults is a chemical picture of moderate proteolysis in mediums containing no utilizable carbohydrate, and a supression of this proteolysis nearly to the vanishing point when utilizable carbohydrates are added. One of the potentially useful facts gleaned from these observations is the striking effect of diet on the nitrogenous metabolism of these normal adult bacteria: utilizable carbohydrate, as long as it is continuously available, reduces or suppresses aromatic putrefactive products practically to the vanishing point. Another feature is the low proteolytic change in plain broth cultures, which contrasts strikingly with the marked proteolysis present in those persons whose intestinal flora contains a very easily appreciable overgrowth of gas bacilli, notably *B. aerogenes-capsulatus.*

Journal of Nervous and Mental Disease, New York

63: 209-312 (March) 1926

Problems Presented by General Paresis. E. Kraepelin, Munich, Bavaria—p. 209.
*Vegetative Disturbances in Postencephalitic Syndromes: Relationship to Diencephalic and Mesencephalic Lesions. Changes in Basal Metabolism. S. Naccarati, New York.—p. 219.
*Psychogenesis of Confirmed Stammerers. L. P. Clark, New York—p. 238.

Basal Metabolism in Postencephalitic Syndromes.—Forty-seven cases presenting postencephalitic syndromes of different duration and intensity are analyzed by Naccarati. From his findings he assumes that basal metabolism is altered in postencephalitic syndromes and, considering the seat of the destructive lesions which take place in encephalitis, the alteration of the metabolic rate can be connected with changes occurring in the vegetative centers located in the gray substance which surrounds the third ventricle and the aqueduct of Sylvius. Metabolic functions are located in very complicated organs, pathways and centers, which form a chain going from the internal organs, endocrine glands, through the sympathetic nervous system to the vegetative centers of the mesencephalon and basal ganglions. A lesion in any of the structures along this chain will lead to alteration of the metabolic activities.

Psychogenesis of Confirmed Stammerers.—The suggestion is advanced by Clark that all stammerers are oral erotics, but as this form of infantile fixation is really only a part of the character distortion from the three great sources of its formation, i. e., the oral, the anal and the urinary erotism, the oral character formation is always interwoven with other reaction formations, against the primacy of the instinctive impulses to nurse, to soil and to void. This fact accounts for the clinical variations in stammering as well as the varieties of make-up. The main accent must be placed on the varieties of oral erotic behaviors.

Maine Medical Association Journal, Portland

27: 23-42 (Feb.) 1926

Treatment of Syphilis. B. B. Foster, Portland.—p. 23.
Quantitative Wassermann Reaction as Guide in Treatment of Syphilis. M. Warren, Portland.—p. 24.
Significance of Proctology as Specialty. R. W. Jackson, Fall River, Mass.—p. 29.
Treatment of Acne Vulgaris with Roentgen Ray. W. E. Freeman, Portland.—p. 38.

Military Surgeon, Washington, D. C.

58: 113-224 (Feb.) 1926

Hospital Center at Mars-Sur-Allier, France. G. A. Skinner.—p. 113.
Treatment of War Wounds of Face and Jaws. J. Bercher.—p. 130.
Forerunners of American Army Nurse. J. C. Stimson, S. L. Milliken and E. C. S. Thompson.—p. 133.
Identification of Projectiles in Criminal Cases. C. H. Goddard.—p. 142
Organization of Divisional Medical Service for Handling Gas Casualties. A. De Roulet.—p. 156.
Typhus Fever Along Rio Grande in 1924 and 1925. F. Gardner and A. K. Brown.—p. 165.
Standardization of Splints in A. E. F. N. Allison.—p. 170.

Minnesota Medicine, St. Paul

9: 105-150 (March) 1926

Intestinal Tuberculosis. F. L. Jennings and E. Fenger, Oak Terrace.—p. 105.
Indications for Artificial Pneumothorax. P. M. Matill and M. H. Wall, Oak Terrace.—p. 108.
Differential Diagnosis of Pulmonary Tuberculosis. H. S. Boquist, Oak Terrace.—p. 110.
Heliotherapy in Tuberculosis. J. H. Bendes, Oak Terrace.—p. 112.
*Pleurisy: Significance and Treatment. D. R. Hastings, Oak Terrace.—p. 114.
Glen Lake Sanatorium. F. S. Mariette, Oak Terrace.—p. 116.
*Flocculation Test in Tuberculosis. W. L. Hardesty, Oak Terrace.—p. 118.
*Treatment and Prevention of Tuberculosis. J. A. Myers, Minneapolis.—p. 121.
Tonsillectomy in Tuberculous. H. Newhart, Minneapolis.—p. 124.
*Thoracoplasty in Tuberculous. A. A. Law, Minneapolis.—p. 126.
Prognosis of Tuberculosis in Infancy and Childhood. F. W. Schlutz, Minneapolis.—p. 127.
Tuberculosis and Pregnancy. J. C. Litzenberg, Minneapolis.—p. 129.
Tuberculosis of Oral Cavity. C. W. Waldron, Minneapolis.—p. 131.

Significance of Pleurisy.—Of 1,182 patients with tuberculosis whose histories were reviewed by Hastings, a history of fibrinous pleurisy and pleurisy with effusion occurred in 55.7 per cent of cases. Hastings feels that this means that fibrinous pleurisy may be the first symptom of pulmonary tuberculosis; hence, patients with fibrinous pleurisy should be warned that they may have tuberculosis.

Flocculation Test in Tuberculosis.—Hardesty prefers the Baum technic. He has carried out the reaction in 300 cases, comprising patients and employees of a sanatorium, and guinea-pigs, healthy and diseased. Strongly positive reactions have occurred only in tuberculosis. The intensity of the reaction is roughly proportional to the extent and activity of the process. Weak positive reactions are occasionally found in those with mild tuberculous infection and in individuals presumably healthy. Negative reactions occurred only once in active tuberculosis. Thus, it would seem that one great value of the reaction consists in its power to differentiate between active tuberculosis in which the bacilli are not found, and other diseases which clinically simulate it.

Diet in Tuberculosis.—Myers urges that the diet of the tuberculous patient must be prescribed by the physician just as drugs are prescribed in certain other diseases. He objects to forced feeding and stresses the importance of meeting the vitamin requirement of the body.

Thoracoplasty in Tuberculous.—Law has done fifty-eight operations on thirty-one patients and has lost only one directly from the operation. This was a one stage operation, and the man died of shock. In all cases he has used local nerve block with procaine, supplemented by nitrous-oxide gas and oxygen analgesia.

Missouri State Medical Association Journal, St. Louis

23: 89-120 (March) 1926

Remedial Laws in Relation to Public Health. J. H. Caruthers, Jefferson City.—p. 89.
Periodic Health Examinations. J. M. Dodson, Chicago.—p. 93.
Periodic Health Examinations. F. I. Ridge, Kansas City.—p. 98.
*Common Warts of Mouth: Two Cases. W. D. Davis, St. Louis.—p. 99.
*Causes of Blindness in Youth. H. D. Lamb, St. Louis.—p. 101.
*Enteritis of 1925. J. Zahorsky, St. Louis.—p. 104.
Importance of Ear, Nose and Throat Diseases in Industrial Efficiency. I. D. Kelly, Jr., St. Louis.—p. 106.

Warts of Mouth.—Of the two cases reported by Davis, one was a single verruca of the tongue. The other patient had an enormous number of verrucae in the mouth.

Cause of Blindness in Youth.—Of 507 cases of blindness examined by Lamb, 216, or 21.2 per cent, were due to ophthalmia neonatorum, and 154, or 15.1 per cent, to optic atrophy. Only eighty-seven cases were caused by congenital cataract, and sixty-eight each by corneal ulceration and uveitis. Trauma caused sixty-six cases.

Diarrhea in Children.—Zahorsky records some peculiarities of the diarrheal diseases in children during the summer of 1925 in St. Louis. To this is added a summary of the therapeutic procedures employed and a discussion of the modern theories of [illegible] enteric intoxication in the light of this clinical experience. Zahorsky thinks we must go back to intestinal antiseptics, laxatives and specific serums Babies should be immunized when young against colon bacilli by suitable vaccines

New York State Journal of Medicine, New York

26 · 175 224 (March) 1926

*Treatment of Certain Cardiac Emergencies H E B Pardee, New York —p 175
*Fertility and Health D Macomber, Boston —p 179
Is Diabetes Due to Diseases of Liver? L W Kohn New York —p 182
Psychoneurosis Case W B Terhune and A F Riggs, Stockbridge, Mass —p 185
Brain Tumors G Horrax Boston —p 186
Value of Blood Chemistry Studies to Surgeon A M Dickinson, Albany —p 190

Treatment of Cardiac Emergencies.—Three points are stressed by Pardee First epinephrine must be used with caution in the presence of a weak pulse due to cardiac failure Second, if digitalis is to be given for cardiac emergencies, it must be given intravenously and in much larger doses than is customary, or the full benefit that digitalis is able to give will not be obtained until the time of the emergency is past Third, these doses should not be used intravenously unless it is certain that the patient has not been taking digitalis within the two weeks preceding

Fertility and Health—The degree of fertility, Macomber says, is indicative of the completeness and normality with which the reproductive organs are functioning It is intimately bound up with conditions of general health and with certain phases of the physiology of the reproductive organs Several abnormal conditions of the body as a whole—namely, anomalies of nutrition, anemia, postural defects, foci of infection and endocrine disturbances—are found frequently associated with lowered fertility Furthermore, these cases of lowered fertility all show some evidence of alteration of function The three forms of alteration most commonly found are hyposecretion, hypersecretion and ovarian dysfunction

Northwest Medicine, Seattle

25 111 166 (March) 1926

Control of Scarlet Fever G F Dick and G H Dick, Chicago —p 111
*Blood Pressure in Women as Influenced by Poor Pelvic Organs W C Alvarez San Francisco —p 120
Adenomyomas and Ectopic Endometrial Growths R W Te Linde, Baltimore —p 123
*Cancer of Cervix Uteri Variations in Malignancy of Different Varieties K H Martzloff Portland Ore —p 127
Recent Mechanical Injuries to Eyes F Jackson, Denver —p 138
Lymphatic Cysts of Neck Case E B Waffle and F E Fowler, Astoria Ore —p 142
Von Recklinghausen s Disease or Neurofibromatosis Case M L Bridgeman Portland Ore —p 144
Carcinoma of Stomach in Man of Twenty Two H H Kretsler, Edmonds, Wash —p 146
Why a Child Welfare Division in State Board of Health? F S Bradley, Helena Mont —p 147
Maternity and Infancy Act H D Bonness Helena, Mont —p 151
World War or Peace as Related to Work of Canton Hospital J O Thomson Canton China —p 153

Blood Pressure in Women—The records from 1,230 women have been analyzed by Alvarez, and the average blood pressures have been calculated for women of different ages The sexually abnormal averaged considerably higher than the sexually normal Single women were found to average a little higher than the married A masculine distribution of body hair, sexual anesthesia, fibroids of the uterus, thyroid disease, and pelvic conditions requiring ovariectomy or hysterectomy were found to be associated with high blood pressure The evidence presented supports the theory that the essential type of hypertension is a bodily peculiarity inherited equally by girls and boys, but ordinarily repressed in the girls by the ovarian or other related secretions In men, and in women with defective pelvic organs, the disease generally makes its appearance shortly after puberty

Cancer of Cervix Uteri—Of 203 patients that were operated on and in whom the ultimate result is known, thirty-eight (18 7 per cent) are living and well today Of the cases in which the spinal cell is the predominant type of cancer cell, 78 8 per cent of the patients are living and well In the transitional group, 15 1 per cent are living and well, while in the fat spindle cell group the percentage is 4 76 The adenocarcinomas, while showing the smallest percentage incidence of all the cervical cancers, give a 21 4 percentage of apparent cures Martzloff feels that the findings are strongly indicative that the histologic character of the predominant type of cancer cell in cervical epidermoid carcinoma is a good index as to the relative malignancy of the neoplastic process

Ohio State Medical Journal, Columbus

22 · 201 280 (March) 1926

Medical Aspects of Angina Pectoris W D Reid Boston —p 205
Cysts of Breast F F Bunts, Cleveland —p 209
*Tic Douloureux of Glossopharyngeal Nerve L A Miller, Toledo —p 214
Hemorrhage of New Born Brain Hemorrhage H O Ruh and J A Garvin Cleveland —p 215
Treatment of Chronic Laryngotracheal Stenosis S Iglauer, Cincinnati —p 218
Public Health Laboratory Program H J Knapp, Cleveland —p 221
Principles Underlying Dietetic Control of Diabetes Mellitus C Striker, Cincinnati —p 224
Economic Status of Doctor L L Bigelow, Columbus —p 228

Tic Douloureux of Glossopharyngeal Nerve.—Miller's patient a woman, aged 42, complained of paroxysmal seizures of sharp, agonizing pain occurring deep in the right side of the neck just behind the ramus of the jaw, probably in or near the tonsil The pain radiated more or less downward in the *neck and sometimes to the right ear (the affected ear)* The seizures lasted from a few seconds to a minute or two They recurred every few minutes, so that it was very difficult for the patient to converse, since talking provoked paroxysms The spasms of pain were excited by eating, drinking, talking or even by washing the face Following a radical operation on the mastoid and middle ear, the patient was immediately freed from the neuralgia, and has remained practically so to the present, except for a very few fugacious pains of little consequence other than to suggest an ill omen

Radiology, St. Paul

6 · 91 180 (Feb) 1926

American College of Radiology A Soiland, Los Angeles —p 122
Teaching of Roentgenology in University of Michigan P M Hickey, Ann Arbor Mich —p 125
Financing Clinicopathologic and Roentgen Ray Laboratory in Hospital and Conserving Professional and Economic Interests of Medical Personnel B C Darling New York —p 127
Radiogrameter Scale for Mensuration by Means of Roentgen Ray C R Johnson Los Angeles —p 131
Roentgen Ray Diagnosis of Syphilis of Stomach L T Le Wald New York —p 138
Therapeutic Uses of Radioactive Substances Cancer of Uterine Cervix J Muir New York —p 146
Calibration as Aid in Standardization of Technical Procedure E C Jerman Chicago —p 151
Treatment of Pyogenic Infection by Roentgen Ray Irradiation T D Lawson Woodland Calif —p 153
Cholecystography Oral Administration of Sodium Tetraiodophenolphthalein J W Larimore St Louis —p 156

Rhode Island Medical Journal, Providence

9 · 33 48 (March) 1926

Roentgen Ray Treatment of Superficial Pyogenic Infections I Gerber, Providence —p 33
Acute Sinusitis F B Sargent, Providence —p 38
Inversion of Uterus I H Noyes Providence —p 39

Southern Medical Journal, Birmingham, Ala.

19 157 240 (March) 1926

*Remote Results of Certain Focal Infections Occurring During Infancy and Childhood McK Marriott St Louis —p 157
*Pulmonary Streptothricosis G Giddings Atlanta Ga —p 160
*Unwarranted Surgery in Achylia Gastrica B W Fontaine, Memphis —p 165
*Dietary Factor in Treatment and Prevention of Pellagra Yeast C Faust Newton Dallas Texas —p 168
Diagnosis of Disease of Gallbladder T Z Cason, Jacksonville Fla —p 176
*Rat Bite Fever (Sodoku) T A Lanford New Orleans —p 179
Rat Bite Fever Case J LaBruce Asheville N C —p 182
Asthma Problem as It Affects South I S Kahn San Antonio —p 183
*Erythema Multiforme Complicating Vaccination F J Eichenlaub, Washington D C —p 186
County Hospitals T H Way Waynesville, N C —p 189
Marriage Laws Their Need and Cause and Cure of Their Weaknesses R M Carruth New Roads La —p 193
Complete Cholecystostomy vs Cholecystectomy in Cases of Empyema of Gallbladder E D Martin, New Orleans —p 198
Gonococcal Endocervicitis H W E Walther and C L Peacock, New Orleans —p 202
Stages in Formation of Bladder Diverticula D K Rose, St Louis —p 206

Retraction Ring and Difficult Deliveries. W. T. Pride, Memphis, Tenn. —p. 212.
Induction of Labor: Case Reports. R. A. Johnston, Houston, Texas.—p. 215.
Prenatal Cure. J. W. Newman, New Orleans.—p. 218.
Syphilis in Railroad Employees. J. R. Garner, Atlanta, Ga.—p. 222.
Certain Diseases and Injurjes of Spine in Adults. E. W. Ryerson, Chicago.—p. 224.
Asthma. T. W. Moore, Huntington, W. Va.—p. 226.
Idiopathic Detachment of Retina: Two Cases. H. L. Sloan, Charlotte, N. C.—p. 228.

Remote Results of Focal Infections.—Marriott emphasizes the fact that general and remote symptoms of infection in the ear, nose and throat of children are more important than the local signs, and the examination of the child is not complete unless these infections are sought for.

Pulmonary Streptothricosis.—A case of streptothrix infection of the lung that has been studied by clinical, roentgenologic and bacteriologic methods is presented by Giddings. The organism grew readily on all mediums. It was pathogenic for guinea-pigs, but not for rabbits.

Unwarranted Surgery in Gastric Achylia.—Reviewing the histories of 175 cases of true achylia, Fontaine has been impressed by the fact that in fully 25 per cent abdominal pain has been the symptom for which the patients sought relief. These cases were not associated with pernicious anemia, syphilis, or cancer of the stomach. In many of the instances, the pain, though less severe, has resembled that of gallbladder disease, appendicitis, or peptic ulcer. Fontaine warns against unwarranted surgery in these cases. They are amenable to treatment by the use of liberal doses of hydrochloric acid, with the proper dietetic regimen.

Diet in Prevention and Treatment of Pellagra.—Faust-Newton says that in the treatment of pellagra the ample ingestion of food containing vitamin B and possibly the unknown pellagra vitamin is essential (fresh meat, orange and lemon juice, tomato juice, yeast). The administration of dried brewers' yeast, in sufficient quantities, is so effective that this may almost be termed a specific for pellagra.

Sodoku; Rat Bite Fever.—Lanford advocates the use of the term sodoku for the designation of cases of real rat-bite fever in order to clarify a greatly muddled situation.

Erythema Multiforme Complicating Vaccination.—Fourteen cases of erythema multiforme complicating vaccination are recorded by Eichenlaub, seven of which were seen personally by the author. Definite conclusions as to the causative agent could not be made. The possible analogy between these eruptions and hemorrhagic smallpox is pointed out. The probable incidence of this type of eruption is estimated at approximately one in 10.000 vaccinations.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

2:223-341 (March) 1926

*Neurologic Studies in Psychotic Cases. D. G. Dickerson, American Lake, Wash.—p. 223.
Interpretation of Inadequate Behavior Through Neuropsychiatric Symptoms. C. L. Carlisle, Waukesha, Wis.—p. 230.
Commitment of Insane Beneficiaries to U. S. Veterans' Bureau Hospitals. G. F. Brewster, Bronx, N. Y.—p. 249.
Artificial Pneumothorax. L. G. Beardsley, Washington, D. C.—p. 253.
Value of Early and Liberal Use of Artificial Pneumothorax. A. Shamaskin, Rutland, Mass.—p. 258.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis. J. H. Allen, Whipple, Ariz.—p. 266.
Roentgenologic Diagnosis of Gastric and Duodenal Ulcer. C. E. Fitzsimmons, Kansas City, Mo.—p. 270.
*Early Diagnosis of Gastric and Duodenal Ulcer. F. C. Cassidy, Dwight, Ill.—p. 276.
Internal Hospital Administration. G. L. Johnson, Algiers, La.—p. 281.
Method of Relining Full Upper Dentures. S. Koontz, Minneapolis.—p. 297.
*Cardiovascular Diseases in U. S. Veterans' Bureau. P. B. Matz, Washington, D. C.—p. 304.
Recent Advances in Study of Cancer. L. H. Prince, Washington, D. C. —p. 310.
Psychoses. O. Everman, Washington, D. C.—p. 318.

Headache and Mental Disease.—A complaint of headache in a patient presenting mental disease, Dickerson says, should always be investigated by both fundoscopic and radiographic examinations; a search for organic disease in these patients should be undertaken in all of its details.

Frequency of Symptoms of Peptic Ulcer.—Twenty-one cases of duodenal ulcer and nine of gastric ulcer were analyzed by Cassidy with reference to frequency of symptoms. Epigastric pain was present in every case; hematemesis in eight; gas in nineteen; constipation in sixteen; headache in sixteen, and dizzy spells in twelve cases.

Cardiovascular Diseases in Veterans' Bureau Hospitals.—A study was made of the incidence of heart disease in the Veterans' Bureau hospitals, and it was found that of a total patient load of 26,689 there were 537 who had some form of cardiac disability, an incidence of 2.01 per cent. Of the 537 cardiac cases, 273 were hospitalized primarily for the heart condition, 176 were hospitalized for some major disability to which the heart condition was secondary, and eighty-eight patients had a heart disability which was considered of minor importance. The incidence of heart disease in the colored race is much higher than it is in the white race. A study of the cardiac diseases found in the tuberculosis hospitals show that 191 of a patient load of 9,299 had some cardiac disability, thus making an incidence of 2 per cent. Forty-five of these patients had mitral insufficiency; twelve had mitral stenosis, and fifty had either acute or chronic myocarditis. It is interesting to note that 35 per cent of the heart disabilities are found in patients suffering from pulmonary tuberculosis. This shows that tuberculosis coexists quite frequently with heart disease. The incidence of heart disease in neuropsychiatric patients is very low. Of 12,297 beneficiaries under treatment in neuropsychiatric hospitals, eighty-two had some cardiac disability, an incidence of 0.6 per cent. It is also found that in general hospitals, out of 5,093 patients, 264 were under treatment for heart disease, an incidence of 5 per cent. Of these patients, fifty-eight had mitral insufficiency, forty-nine had acute or chronic myocarditis, twenty had combined mitral and aortic lesions, nineteen were cases of mitral stenosis, and sixty-five patients had heart lesions which were not classified. The most common cardiac diseases observed in Veterans' Bureau beneficiaries are mitral insufficiency, acute and chronic myocarditis, cardiac hypertrophy and mitral stenosis. The high incidence of acute and chronic myocarditis is due to the large number of cases of tuberculosis under treatment, which condition may be an etiologic factor in inflammatory processes of heart muscle.

Virginia Medical Monthly, Richmond

53:755-812 (March) 1926

*Stricture of Ureter. C. J Andrews, Norfolk.—p. 755.
*Ureteral Stricture. W. B. Martin, Norfolk.—p. 758.
Spinal Puncture as Aid in Neurosurgical Diagnosis. J. G. Lyerly, Richmond —p 763
Xerophthalmia in Infants. St. G. T. Grinnan, Richmond.—p. 768.
*Ova in Gall Tract Drainage. R. S. Preston, Richmond.—p. 769.
Indications for Calcium Therapy. O. O. Ashworth, Richmond.—p. 772.
Vomiting of Pregnancy. R. P. Kelly, Lynchburg.—p. 775.
Diagnosis and Treatment of Goiter. W. H. Higgins, Richmond.—p. 780.
Surgical Treatment of Nonparalytic Strabismus. J. H. Dunnirgton, New York.—p. 784
Pathology of Heart-Pain. J. A. Wilkins, Norfolk.—p. 787.
Pleurisy. M J. Payne, Staunton.—p. 789.

Stricture of Ureter.—Fifty-five cases are analyzed by Andrews. Forty operations were done on twenty-seven of these patients, and while it is not believed that all these operations were useless, the fact remains that the pain for which the operations were done was not relieved.

Ureteral Stricture.—Martin endeavors to construct a clinical picture of ureteral stricture that may be of assistance to the general practitioner in recognizing this condition. The material consists of twenty cases. Cystoscopic examination showed a well defined stricture of the right ureter. Certain symptoms stand out prominently, especially pain in the back radiating to the bladder, associated with history of bladder irritation at some time, together with localized tenderness. The association of these symptoms alone is sufficient to arouse suspicion of ureteral stricture. While the condition is not extremely frequent, it occurs often enough to make it important that every one should be familiar with the symptomatology. Martin says that in consideration of lower right quadrant pain it is of especial significance, and before a laparotomy is undertaken for the relief of undetermined trouble, stricture of the ureter should be excluded.

Ova in Gall Tract Drainage—Preston reports the case of a woman whose principal complaints had been nausea, giddiness, constipation cramps and paresthesias in the lower extremities and attacks of pain in the hepatic and right renal regions The woman had been subjected to a number of operations without getting any relief On making duodenal drainage, Preston discovered ova in the bile He concludes that there was a female *Ascaris* in the biliary tract most likely inside of the liver This parasite had existed there five or more years judging from a long continued eosinophilia It had been depositing ova for more than a year

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FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below Single case reports and trials of new drugs are usually omitted

British Journal of Radiology, London

31 81 118 (March) 1926

Treatment of Carcinoma of Tongue D Quick New York —p 81
Gastro Intestinal Infection Its Roentgen Ray Manifestations C Eastmond Brooklyn N Y —p 93
Light Sources Used in Actinotherapy I I Baker, London —p 105

British Medical Journal, London

1 515 554 (March 20) 1926

*Diet and Disease E Mellanby —p 515
*Value of Irradiated Cholesterol in Treatment of Rickets L G Parsons —p 519
*Etiology of Gastric and Duodenal Ulceration R W Monsarrat —p 521
Treatment of Dangle Foot by Campbell's Method R Ollerenshaw —p 525
Treatment of Amebic Dysentery by Auremetine J G Willmore and W H Martindale —p 525
*Perforated Jejunal Ulcer A T Ashcroft —p 528
Acute Suffocative Pulmonary Edema M Cohen —p 528
*Treatment of Septic Tuberculous Arthritis J O Conor —p 528
Appendix in Left Inguinal Hernia G F Smith —p 528

Diet and Disease—Mellanby presents what he regards as evidence that defects of diet of women during pregnancy and lactation are responsible for some, and possibly much, of the illness and mortality of young infants The new teachings of diet have been applied to some extent to the feeding of children, and this is no doubt partly responsible for the decrease in infant mortality during recent years at a time when overcrowding and some other hygienic defects are as bad as or even worse than ever, but it is necessary to extend the teaching to the problem of maternal feeding This would probably show its first effect by reducing the infant mortality of children under 1 month of age and would result in great improvement in the physique of children It would increase the resistance of infants to infections which produce catarrhal conditions of the respiratory and alimentary tracts and all the other sequelae so generally recognized as likely to follow It would certainly result in a better grown and less rickety type of child, and would do something also to improve the structure of the teeth and thereby to reduce the appalling amount of caries in the teeth of children It would probably also bring about improvement in the general health of the pregnant woman and do away with some of the unfortunate experiences to which she is liable

Irradiated Cholesterol in Rickets—A case of severe rickets is described by Parsons which had been under treatment during the greater part of 1925 From April to the beginning of September, the child received cod liver oil as an outpatient, but with only slight improvement during the last three months of the year he was admitted into the hospital, and irradiated cholesterol was administered, with the result that the rickets was cured

Etiology of Gastric and Duodenal Ulcer.—In Monsarrat s opinion there is no satisfactory evidence that chronic gastric and duodenal ulceration is primarily due to direct invasion of the stomach or duodenal wall by specific organisms Chronic gastric and duodenal ulceration is not caused by alterations in the chemistry of the gastric secretions The evidence available points to alteration in gastric rhythm being the primary morbid condition which, when persistent, leads to the development of ulceration The site of the ulceration is the site of maximum wear and tear by gastric contents, whose normal neutralization has been interfered with by the altered gastric rhythm The gastric secretions, innocuous to the stomach wall under normal conditions, cause irritation and eventual ulceration, when the gastric rhythm is altered trophic changes may also prepare the way for this action The fundamental condition on which these morbid changes in the gastric motility and rhythm depend is doubtless a disorder of gastric innervation which may have its origin in toxic influences, or psychic influences, or in reflex influences from disease elsewhere The innervation of the stomach is not however so completely analyzed as to make it possible to say whether these influences bear on an autonomic gastric system or whether they affect the stomach by way of the vagus or sympathetic There is, however, some evidence that in the gastric type which is usually associated with duodenal ulceration there is some inhibition of impulses by the splanchnic path and that in the gastric type which is usually associated with gastric ulceration, it is the vagus impulse that is depressed

Perforated Jejunal Ulcer—In a case of perforated duodenal ulcer reported by Ashcroft, a posterior gastro enterostomy was performed and the man made an uninterrupted recovery A year later the patient was readmitted He stated that there had been total absence of pain in the abdomen for seven months after operation At the end of this period he began to experience periodic attacks of generalized abdominal pain, occurring every three days and lasting from ten to fifteen minutes the pain had no relation to food Gradually the characteristics of the pain altered, it became localized to a point 1 inch below the umbilicus and began to show a definite relationship to food coming on about four hours after a meal and lasting until another meal was taken The pain was relieved by self inducing vomiting At the operation a perforated jejunal ulcer was found on the posterior wall of the efferent loop of the gastro-enterostomy coil of jejunum about 1½ inches from the patent gastro enterostomy stoma The ulcer was enclosed by a purse-string suture As the pylorus was found patent, admitting a thumb easily, an entero enterostomy between the afferent and efferent loops of the gastro enterostomy loop of jejunum was performed Three months later the patient was again admitted with symptoms similar to those which followed his first operation A laparotomy was performed, and a second jejunal ulcer was discovered in close proximity to the gastro-enterostomy stoma A partial gastrectomy, which involved three fourths of the stomach and the whole of the loop of the jejunum taking part in the gastro-enterostomy, was performed The man made an absolute recovery In a second case a posterior gastro enterostomy was performed for a juxtapyloric ulcer The patient was again admitted three months later with signs suggestive of a perforated duodenal ulcer The abdomen was opened and a perforated jejunal ulcer was found on the efferent loop of the gastro-enterostomy coil of jejunum

Treatment of Septic Tuberculous Arthritis—O'Conor opens all sinuses freely so as to expose the interior (and recesses) of the joint Every visible particle of diseased bone and tissue is removed, and copious irrigation with warm hydrogen peroxide (1 17) and phenol (1 70) is done Then large wisps of silkworm gut are introduced, and the rest of the cavity is packed with rolls of gauze wrung out of freshly prepared iodoform emulsion The flushing and packing is repeated after forty-eight hours The patient is kept outdoors the part being maintained in absolute rest

China Medical Journal, Shanghai

40. 95 184 (Feb) 1926

Anthropometry in China P H Stevenson —p 95
Converting Chinese Ages to Their Foreign Equivalents P H Stevenson and P Ming Tzu —p 128
Value of Milk Injections in Treatment of Gonorrheal Ophthalmia D V Smith —p 131
Cytology of Aural Discharge S Tsen —p 136
Chocolate Cysts of Ovary with Implantation Pelvic and Intestinal Endometriosis J R B Branch —p 138
Check List of Mosquitoes of Sino Japanese Areas L C Faust —p 14
Hotels as Measure of Economy in Hospital and Administration F A Tucker —p 144
Medicinal Adjuvants C Y Cheng —p 146
Rat Bite Fever E S Curtis —p 155

Edinburgh Medical Journal

33: 97-188 (March) 1926

*Virulence of Tuberculous Viruses. W. T. Munro and W. M. Cumming.—p. 97.
Treatment of Renal Tuberculosis from Standpoint of Surgeon. H. Wade.—p. 108.
Production of Certified Milk. R. Philip and J. C. Simpson.—p. 118
Early Tuberculosis in Cows. R. Philip and J. C. Simpson.—p. 120
Use of Light in Treatment of Tuberculosis of Skin. N. Walker.—p 122.
Serology of Tubercle Bacillus. W. M. Cumming.—p. 135.
*Reaction Curve of One Hundred and Seventeen Strains of Tubercle Bacilli. W. M. Cumming.—p. 141.
*Pulmonary Tuberculosis and Allied Conditions in Infancy and Childhood. L. Findlay.—p. 147.
*Some Statistical Aspects of Tuberculous Meningitis. J. L. Halliday.—p. 160.

Virulence of Tuberculous Viruses.—Of sixty-three viruses isolated by Munro and Cumming from "surgical" lesions, twenty were found to be of the bovine type, two of these being, however, somewhat less virulent than typical dysgonic viruses, one of which was atypical in both culture and virulence. Bovine bacilli are very rarely obtained from pulmonary lesions, but they are frequently obtained from glandular lesions. By selection according to age groups and lesions, one can show a distinct age and tissue incidence of bovine infection.

Reaction Curves of Tubercle Bacillus Strains.—Cumming says that the amount of information derived from a study of the reaction curve in the differentiation of human from bovine strains of tubercle bacilli is not commensurate with the amount of time and labor involved.

Diagnosis of Pulmonary Tuberculosis in Children.—If there is no generalization of the disease throughout the lung, and the enlarged spleen, enlarged glands, and the presence of papuloneurotic tuberculids do not come to aid, Findlay says, the physician may not even surmise that he is dealing with tuberculosis, whereas the radiologist may, with the utmost confidence, diagnose the true nature of the disease.

Statistics on Tuberculous Meningitis.—Halliday's statistics show that the yearly death rate from tuberculous meningitis bears a more or less constant ratio to the yearly death rate from all forms of tuberculosis; in other words, tuberculous meningitis has declined at the same rate as tuberculosis in general. Tuberculous meningitis had a maximum seasonal prevalence in spring and early summer. This appears to be a belated manifestation of the conditions unfavorable to the respiratory system which obtain during the winter months. The spread of tuberculous infection, like that of diphtheria and scarlet fever, does not appear to be influenced by overcrowding and bad housing conditions, as tuberculous meningitis is no more common in the child population of the smaller houses than it is among children in the larger houses.

Indian Medical Gazette, Calcutta

2: 53-102 (Feb.) 1926

Influence of Food on Moral and Physical Development in British India. V. B. Green-Armytage.—p. 53.
Baby Cinema in Public Health Propaganda. A. W. Tuke.—p. 55
*Isolating and Cultivating Vibrios from Feces for Detection of Vibrio Carriers in Field Work. J. W. Tomb and G. C. Maitra.—p. 56.
Incidence of Neurosyphilis Among Colored Races. O. A. R. B. Hill.—p. 57.
*Katakar Oil Poisoning. S. L. Sarkar.—p. 62.
*Treatment of Bubonic Plague with Intravenous Injections of Iodine. A. C. Bharadwaj.—p. 63.
Effect of Posterior Gastrojejunostomy on Chronic Duodenal Ulcer. W. C. Paton.—p. 64.
Extensive Fracture of Skull with Injury to Brain: Escape of Brain Matter; Recovery. A. S. Dawson.—p. 65.
Treatment of Amebic Abscess of Liver. H. Chand.—p. 66.
Case of Acute Hemorrhagic Pancreatitis. K. M. Nayak.—p. 67.
Operations on Old Men. B. Singh.—p. 68.
Case of Precocious Sexual Development. M. G. R. Row.—p. 70.
Huge Sebaceous Cyst of Scalp. P. P. Pillai.—p. 70.
Case of Dermoid Cyst of Ovary. K. Singh.—p. 71.
Case of Extra-Uterine Gestation. H. Chand.—p. 72.
Case of Myomectomy. N. P. Shrivastava.—p. 72.
Case of Septic Abortion Complicated by Coli Infection. D. N. Buchia.—p. 73.
Case of Madura Foot Treated by Chemotherapy: Apparent Cure. F. J. Palmer.—p. 74.
Case of Incipient Heart-Block. B. P. Bannerji.—p. 74.
Fatal Result Associated with Filarial Infection. B. N. Gupta.—p. 75.
Case Resembling Infantile Cirrhosis of Liver in Which Recovery Took Place. N. Gopalan.—p. 75
Case of Pleural Effusion with Abdominal Symptoms. M. G. R. Row.—p. 77
Iodine Intravenously in Pulmonary Disease. V. J. Lopes.—p. 77.
Cases of Foreign Bodies in Nose and Ear. J. N. Pradhan.—p. 78.

Isolating and Cultivating Vibrios from Feces.—Using bowls and tank mud, Tomb and Maitra imitated Nature and manufactured artificial ground tanks for the purpose of using them as a culture medium for vibrios. To 250 cc. of sterilized tank water, 1 per cent common salt and 0.1 cc. of a 1 per cent sterile peptone solution are added before inoculating the medium with feces. This method of isolating vibrios from feces and cholera stools has proved a great advance over all other existing methods, not only on account of its greatly increased accuracy but also on account of its cheapness.

Katakar Oil Poisoning.—Katakar oil is obtained from the mustard-like seeds of an Ayurvedic medical herb known as Sialkata. The scientific name of the plant is *Argemone mexicana* Linn., an American weed commonly known as the Mexican prickly poppy. The use of mustard oil adulterated with katakar oil causes symptoms like those of epidemic dropsy.

Iodine Intravenously in Bubonic Plague.—Bharadwaj reports good results from the use of iodine intravenously in the treatment of plague. He uses a solution of 18 grains ($1\frac{1}{6}$ Gm.) of iodine in 4 ounces (120 cc.) of physiologic sodium chloride solution and injects from 5 to 10 cc. in one dose every day for four consecutive days. Early cases are very easily controlled, and from three to five injections are sufficient to effect a cure. The iodine treatment gives better results if it is supplemented with injections of pure phenol into the bubo, or of $\frac{1}{16}$ grain (4 mg.) of mercuric chloride in 2 cc. of distilled water into the lymphatic area drained by the group of glands in which the bubo has formed. No mercurial poisoning resulted from as many as three such injections given consecutively. No nourishment except water should be given for three days, and a mixture containing potassium iodide and stimulants should be given every four hours.

Journal of Laryngology and Otology, Edinburgh

41: 73-136 (Feb.) 1926

Furuncle of Right Nasal Vestibule: Septic Thrombosis of Cavernous Blood Sinuses: Leptomeningitis: Death: Recovery. A. Taylor and F. E. Reynolds.—p. 73.
Treatment of Congested and Enlarged Inferior Turbinates. F. H. B. Norrie.—p. 87
Connection of Brain Abscess with Bronchiectasis. J. Adam.—p. 93.
Results of Ionic Medication in Chronic Middle Ear Suppuration. N. Lister.—p. 94.
*Unusual Cause of Death After Removal of Adenoids and Tonsils. H. B. Tawse.—p. 97.
Hemorrhage from Nasopharynx Following Adenoid Curettage. F. C. Ormerod.—p. 97.
*Unusual Path of Extrusion of Retained Tooth Fang. F. C. Ormerod.—p. 99

Hemorrhage in Pons After Tonsillectomy.—Tawse records the case of a child who died suddenly twenty-three hours after removal of tonsils and adenoids. There was no cause of death apparent. The necropsy disclosed a hemorrhage, the size of a large peanut, in the center of the pons.

Retained Tooth Root Is Sneezed Out.—Ormerod reports the case of a woman, aged 21, who had a right upper premolar tooth extracted, one root being broken and retained. Six months later the patient was wakened in the morning by a tickling feeling at the back of the nose. A violent attack of sneezing resulted in the expulsion from the left nostril of the root of the bicuspid. Transillumination and puncture showed the right antrum to be full of a thin purulent fluid. The roentgenogram showed a large cavity in the region of the upper bicuspids with a very irregular and thin layer of bone separating it from the antrum. Ormerod concludes that the dental root must have become loose in an abscess formed around it; the tooth then passed into the antrum through an erosion in its floor and escaped through the normal ostium into the nose, from which it passed back into the nasopharynx and was then sneezed out.

Journal of State Medicine, London

34: 63-124 (Feb.) 1926

*Carrier Problem in Relation to Enteric Fever and Diphtheria. J. C. G. Ledingham.—p. 63.
*Prevention and Arrest of Rheumatic Disease. M. B. Ray.—p. 88.
Rheumatic Infection in Childhood. W. T. G. Pugh.—p. 111.
Vitamin B and Metabolism. R. H. A. Plimmer and J. L. Rosedale. —p. 117.

34: 125-186 (March) 1926

Variola, Vaccinia and Avian Molluscum. J. C. G. Ledingham.—p. 125.
Methods of Investigating Ventilation. H. M. Vernon.—p. 144.
Incidence and Prevention of Venereal Disease in Royal Navy. T. B. Shaw.—p. 154.
Prevention of Tuberculosis. S. L. Cummins.—p. 169.

Disease Carrier Problem.—Ledingham says persuasion and instruction will do more to reduce infection from declared carriers than any compulsory order rigidly applied. At the same time the community for its own security must have full power to retain on a permanent register all declared carriers, to insist on notification of all changes of address, to examine at any time their discharges and if necessary to remove to hospital for this purpose.

Prevention of Rheumatic Disease.—Ray asserts that nearly one sixth of the total invalidity of Great Britain is directly due to diseases classed as "rheumatic." Each year these diseases alone cost the Approved Societies nearly 2,000,000 pounds in sickness allowances and nearly 3,000,000 weeks are being lost to the nation in consequence. The importance of a publicity campaign with the object of educating the public in the need for a concerted effort to protect children from the devastating effects of this disease is strongly urged by Ray. Special hospitals for the treatment of children who have had an attack of rheumatic fever should be established all over the country. These institutions would differ from the ordinary hospital in that the patients would be kept for prolonged periods. The most satisfactory treatment is said to be "hydrological," implying the use of waters, baths and physical methods generally.

Lancet, London

1: 641-694 (March 27) 1926

Diseases of Nervous System. E. F. Buzzard.—p. 641.
Experimental Epidemiology. W. W. C. Topley.—p. 645.
*Diabetes Mellitus: Recoverable Disease? G. H. Percival.—p. 651.
*Changes in Ventricular Rate Associated with Stokes-Adams Attacks in Complete Heart-Block. C. E. K. Herapath.—p. 563.
*Double Inguinal Hernia in Infancy: New Incision. J. T. Morrison.—p. 656.
Unusual Case of Pneumothorax. B. Morgan.—p. 656.

Dietetic Treatment of Diabetes Mellitus.—The diet scale used by Percival is that described by Murray Lyon, consisting of three types graded according to the carbohydrate-fatty-acid ratio. The various diets are selected and interchanged to suit the requirements of individual cases during varying degrees of tolerance. Insulin is withheld, except in cases possessing such a low carbohydrate tolerance that it is impossible to abolish glycosuria, or to continue an adequate caloric intake by dietary measures alone. When required, insulin is injected two hours before a meal, except in very severe cases, when the interval is reduced at first to one or one and a half hours. The beneficial effect of this line of treatment is forcibly illustrated by those cases in which large doses of insulin have been diminished and ultimately stopped, while the patient has continued to take a generous diet, the constitution of which presents no extreme variation from the normal. In some of the cases treated by diet alone, a sugar tolerance approaching almost normal has been reached, and the injury to the pancreas has been apparently either recovered from or compensated for. On the other hand, in those who required insulin, the tolerance regained is not nearly so great. The cases reported by Percival are said to emphasize, first, the controllable character of the disease in the majority of cases treated on physiologic lines with the whole-hearted cooperation of the patient, and secondly, the fact that a surprising adequate carbohydrate tolerance may be recovered.

Ventricular Rate in Stokes-Adams Disease.—A continuous electrocardiogram of the whole of a Stokes-Adams attack is reproduced by Herapath. It suggests an explanation of the attacks of ventricular asystole. The attacks of asystole in a case of complete heart block were abolished by injection of epinephrine.

Incision for Double Herniotomy.—Morrison makes a 1½ inch (4 cm.) transverse incision along the line of the crest of the pubis which gives free access to either external abdominal ring. The incision is deepened till the surface of the aponeurosis is reached. With quite moderate traction the region of the abdominal ring is exposed. An oblique incision through the soft parts parallel to Poupart's ligament brings the cord and its coverings into view. The operation can then be completed in the ordinary way.

Quarterly Journal of Experimental Physiology, London

16: 1-86 (March 18) 1926

Experimental Mitral Incompetence. R. J. S. M'Dowall.—p. 1.
Movements and Reaction to Drugs of Strips of Gastric Musculature of Cat and Dog G. L. Brown and B. A. M'Swiney.—p. 9.
Contractions of Isolated Cecum of Rabbit. J. A. Gunn and M. H. MacKeith.—p. 41.
Nervous Symptoms of Insulin Hypoglycemia in Rabbits Contrasted with Convulsions Induced by Cocaine. W. R. Brain.—p. 43.
Increase of Methyl-Guanidine in Blood After Parathyroidectomy. D. N. Paton and J. S. Sharpe.—p. 57.
Effect of Exercise on Growth of White Rats. C. Price-Jones.—p. 60.
*Size of Human Erythrocytes Before and After Exercise. H. Dryerre, W. G. Millar and E. Ponder.—p. 69.

Effect of Exercise on Size of Erythrocytes.—A method for investigating the mean size of human erythrocytes before and after exercise is described by Dryerre et al. In this method the cells are measured without having been exposed to any atmosphere other than one such as would be in equilibrium with the gaseous content of the blood vessel from which they were withdrawn. By this method, no difference has been found between the mean diameter of the cells before and after violent exercise.

Bulletin de l'Académie de Médecine, Paris

95: *211-257* (March *9*) *1926*

*Syphilis Among Workers in France. E. Jeanselme and Burnier.—p. 214.
Standardization of Biologic Laboratories. P. Remlinger.—p. 236.
Study of Microsporosis in Horses. Brocq-Rousseu.—p. 242.
Mechanical Milking of Cows. H. de Rothschild.—p. 244.
*Anatoxin Vaccination Against Diphtheria. C. Zoeller.—p. 247.
Refrigerator and Frozen Fish. A. Loir and Legangneux.—p. 252.

Syphilis in the Working Classes.—Jeanselme and Burnier compare the statistics of new syphilitic infections in France and in other countries the last six years. While the number of recent cases of syphilis has been decreasing in Belgium, Switzerland, Denmark and Austria, it has been increasing among workers in France. This fact seems to be due in part to the afflux of foreigners and natives of French colonies. It is not the imported virus which is accused, since 82 per hundred of the newcomers contracted their syphilis in France. At the St. Louis Hospital, Paris, the new infections formed 50 per cent of the total in 1919; then dropped to 31 per cent in 1923, and climbed to 60 per cent in 1925. Another factor in the increase is the tendency of French physicians to replace arsphenamine by bismuth, which is considered by Jeanselme and Burnier as less effective in treatment of syphilis.

Anatoxin in Mass Vaccination During Diphtheria Epidemic.—Zoeller applied anatoxin vaccination on a large scale in newly enrolled soldiers during an epidemic of diphtheria. A dose of 0.5 cc. of anatoxin was used for the first injection, 1 cc. for the next; the intervals, three weeks and eight days. In 305 with a positive Schick test, diphtheria appeared in 3.6 per cent after one injection; in 2.84 per cent after two, while among the nonvaccinated (including all the older soldiers) the percentage was 3.67. In another group of eighty-eight with a positive Schick test, twenty-eight were injected once or twice, and sixty, three times. Diphtheria occurred in 50 per cent after one or two injections; in 10 per cent after three. Among the controls the percentage was 50 per cent. The membranous throat disease, among the vaccinated, was not accompanied by phenomena of diphtheria intoxication. It disappeared spontaneously, without antitoxin treatment. This may represent an allergic form of diphtheria sore throat. The complete immunity from anatoxin seems to be preceded by a relative immunity—an allergic phase allowing the development of an attenuated diphtheria. No untoward by-effects were encountered in the nearly 3,000 injections of the anatoxin.

95: 259-302 (March 16) 1926

Is Endamoeba Coli Pathogenic in Man? E. Brumpt.—p. 284.
Epidemic of Relapsing Fever in Spain. Sadi de Buen.—p. 294.
*Neuromas in Cystic Ovary. G. Roux.—p. 295.

Neuromas Responsible for Pains with Cystic Ovaries.—Roux examined a certain number of ovaries with sclerous and cystic degeneration, accompanied by dysmenorrhea, severe pain in the small pelvis and sometimes even epileptic seizures connected with menstruation. He found numerous neuromas, formed from sympathetic fibers, scattered around the arteries; they may explain the nervous manifestations. The lesions of the ovarian parenchyma were relatively insignificant. Periarterial sympathectomy on the hypogastric or the presacral branch might be considered in these cases, he adds.

Presse Médicale, Paris

34: 353-368 (March 20) 1926

*Diagnosis of Occult Branch Block. C. Lian and C. Petit.—p. 353.
*Parathyroid Implant in Tetany. C. Frugoni et al.—p. 355.
Effect of Lumbar Puncture on Diuresis, Glycosuria and Blood Pressure. A. Ravina.—p. 358.

Electrocardiography of Recurring Syncope.—Lian and Petit report cases of recurring syncope without clinical changes of the heart rhythm, or with *only slightly retarded heart beat.* Electrocardiograms revealed block of the right branch of the bundle of His, thus explaining the tendency to syncopes. One of the patients soon died; another developed a lesion of the whole of the bundle of His. In two cases the functional derangement subsided and the improvement has persisted for two and a half years. By adapting itself to the auriculoventricular dissociation, the heart may correct for a long time the tendency to syncopes.

Parathyroid Graft in Tetany of Adult.—Frugoni, Scimone and Comolli report a case of chronic tetany in a young electrician, associated with epilepsy, both cured by transplantation of a parathyroid gland into the vaginalis of the right testicle. The parathyroids were taken from a girl during an operation for goiter. The technic for the grafting was that of Voronoff. Since the operation, made in June, 1925, there have been no manifestations of epilepsy or tetany. The previous low calcium content of the blood returned to normal at the same time as the phenomena of parathyroid insufficiency disappeared. The graft can be palpated now the same as at first.

34: 369-384 (March 24) 1926

Danger of Primary Suture for Traumatic Wounds. B. Desplas.—p. 369
*Antigen Treatment of Tuberculosis. L. Nègre and A. Boquet.—p. 370.
Partial Resection of Ribs in Pulmonary Tuberculosis. Jacquerod.—p. 371.
*"Channel Fever." J. Bohec.—p. 372.
Is Sciatica a Nerve or Muscle Disease? J. Rouillard.—p. 372.

Extracts of Tubercle Bacilli in External Tuberculosis.—Nègre and Boquet recall that *their "methyl antigen"* is prepared from tubercle bacilli treated previously with acetone. They have used it in 500 cases of different forms of tuberculosis, in a 10 per cent solution, by subcutaneous or intramuscular injection, in gradually increasing doses to 1 cc. Then the undiluted antigen was employed, gradually increasing to 1 cc.; this amount was never surpassed. The injections were given at from two to eight day intervals; sometimes every day. There was no local or general reaction as from tuberculin. Improvement of the general condition occurred after four or five injections. Sixty cases of external tuberculosis are cited proving the local action of the antigen. Remarkable results were noted in lupus and tuberculous processes of the nasal and laryngeal mucosa, and of glands, bones, joints and peritoneum. Improvement of the local lesions was manifest in from three to eleven months.

"Channel Fever."—Bohec's term is "land fever," for the set of symptoms sometimes experienced when, after an ocean voyage, the ship enters a relatively land-locked body of water. The syndrome is similar to seasickness, and is related to certain forms of asthma, etc., the whole forming an anaphylactic colloidoclastic shock in the emotionally predisposed. Desensitization, both psychic and biologic, is required in treatment.

Riforma Medica, Naples

42: 217-240 (March 8) 1926

Gastroptosis plus Defect in Omentum. D. Giordano.—p. 217.
*Constitutional Eosinophilia. L. Cirio.—p. 219.
Expiratory Metamorphosing Respiration. S. Mongini.—p. 223.
Sport and Hygiene. M. Gioseffi.—p. 234.
F. Redi, 1626-1697. M. Mastrorilli.—p. 238.

Constitutional Eosinophilia.—Cirio reports a case of very high proportion of eosinophils (average 66 per cent) in an otherwise healthy man. The percentage of eosinophils was also above normal in his brother and children (6 to 15 per cent).

Archivos Españoles de Pediatría, Madrid

10: 5-64 (Jan.) 1926

*Asthma in Children. J. González Meneses y Jiménez.—p. 5.
Surgery for Spastic Infantile Paralysis. M. Bastos Ansart.—p. 11. C'td.
*Meningococcus Meningitis in Infant. J. de Cárdenas y Pastor.—p. 50.

Asthma in Children.—González Meneses has found thyroid treatment exceptionally effectual in asthma of the capillary bronchitis type, which is the most common form. The children were between 3 and 8 years old, and some had been having attacks of asthma for years. The treatment was with thyroid tablets, from 0.03 to 0.05 Gm. daily, at one time, kept up for several months. Some of the children have taken them for more than a year, and always without signs of toxic action from these small doses. The brilliant outcome suggests that the asthma was due primarily to thyroid insufficiency. In fourteen cases thus treated, thirteen were completely cured, some of the children having no further attacks from the very first. In the one case in which it failed, the asthma was of the "horse asthma" type. Some time later this child was given an injection of diphtheria antitoxin—as a kind of protein therapy—and the child died in half an hour. Protein therapy should be applied very cautiously to children with asthma.

Meningococcus Meningitis in an Infant.—The special feature of the case was the complete recovery without sequelae under intensive treatment, although it had not been begun until there had been nuchal rigidity for twenty days. Then a total of 120 cc. of the antiserum was injected into the ventricles in six days, and an additional 20 cc. in the three following days, with 60 cc. into the muscles in the first six days. The infant was 6 months old and had been breast fed until the last two months.

Archivos Lat.-Amer. de Pediatría, Buenos Aires

19: 1219-1306, 1925

Erythema Nodosum and Tuberculosis. G. Aráoz Alfaro.—p. 1219.
The Cephaloplegic Syndrome. F. Figueira.—p. 1235.
*Implant Treatment of Joint Disease. C. Robertson Lavalle.—p. 1239.
Tuberculous Peritonitis Cured by a Laparotomy. Bazán and Casaubón.—p. 1272.
*Alcoholism in Children. J. M. Obarrio.—p. 1278.
Malignant Diphtheria. A. Segers.—p. 1290.
Typhoid with Two Relapses. M. Rodella.—p. 1294.

Implant Treatment of Joint Disease.—Robertson Lavalle's method was described in these columns, March 20, page 916. He here brings his record down to date, with nineteen illustrations, confirming the complete cure with his technic which requires *only twenty-five days in bed.* The list includes tuberculous osteo-arthritis and other lesions of the knee, hip joint and elbow.

Alcoholism in Children.—Obarrio insists that wine and beer are always injurious for children, even in very small quantities. The evil effect may be apparent only during sleep or in change of character or in nervous affections—all the pathologic conditions encountered in adult alcoholics may be observed in children. In his own experience, oneiric hallucinations in children were traceable to chronic alcoholism in 98 per cent of the cases. One child of 5 was extremely irritable and had lost the right Achilles tendon reflex and the liver was much enlarged; she had been given wine and beer since early infancy. One boy of 5 had been given wine for a year, and had developed polyneuritis, alcoholic cirrhosis and oneiric hallucinations. Obarrio has encountered three cases of alcoholic polyneuritis in children, one less than 4 years old.

Revista de Medicina y Cirugía, Caracas

8: 179 201, 1925

Foundation of Mutual Aid Society in the Caracas Medical Society —p 179
*Treatment of Puerperal Fever L Razetti —p 186 Cen
Idem J C Rivas Morales —p 199

Treatment of Puerperal Infection —Razetti says that in thirty-two years of practice, with hundreds of obstetric cases, including many major obstetric operations, he has had only one instance of grave puerperal infection This was a premature delivery with acute gonococcal bartholinitis and septicemic fever but the woman recovered under vaccine therapy fixation abscesses and local treatment of the bartholinitis The internal genitals did not seem to be involved at all He has found that many parturients with high fever, headache and abdominal pains recover promptly after a thorough purge Acute septic metritis calls for curetting hysterectomy, to be of any use must follow the curet within twenty-four hours He warns not to forget that a parturient may develop typhoid influenza, malaria scarlet fever or lymphangitis like any one else

Revista de Medicina y Cirugía, Havana

30 611 634 1925

Cataract Complicating Buphthalmia J F Dehogues —p 611
*History of Cancer in Havana J Le Roy y Cassa —p 618
Modern Views of Acute Digestive Disturbances in Infants R Rodriguez Martinez —p 621
Experimental Study of the Endocrine A J Ceo —p 627 Cen p 615

The first Case of Cancer Reported in Havana —Le Roy relates that Havana was founded in 1519 but was burned by a French pirate in 1555 No records are available from that date to 1613 when a register was started of the bodies buried in the cathedral It records the burial in 1637 of a Portuguese married man with noli me tangere,' which was the term applied to cancer in those days

30 691 705 1925

*Cholesteremia in Tuberculosis R Grau San Martin —p 691
Supra-Orbital Foramens Becquer et al —p 698

Cholesterol Content of the Blood in Tuberculosis —Grau San Martin has confirmed the assertions of Chauffard and others to the effect that the normal average of cholesterol in the blood is 1 5 per thousand This was the figure he obtained in forty two healthy persons, while the range in twenty tuberculous subjects was from 0 45 to 1 25 with an average of 0 82 The cholesterol content declines as the disease progresses, and hence it may be an important element in the prognosis

Revista Med.-Quirúrgica de los Hospitales, Bogota

1: 219 260 (Dec) 1925

*Uterine Fibromyomas R Ucros and J De Francisco —p 221
Present Status of Treatment of Hemorrhoids J I Calderon —p 229
Sympathicotonia in Relation to Dyspepsia A Luque B —p 231
Criminal Responsibility from Medicolegal Standpoint G Uribe Cualla —p 239
Cholecystography F Jaramillo Arango —p 244
Mycoses in Colombia A Pena Chavarria —p 248 Cen
Quinidin in Treatment of the Heart C Trujillo Gutierrez —p 257

Uterine Fibromyomas —Ucros and De Francisco analyze 319 operative cases at the San Juan Hospital since 1907, giving thirteen illustrations of various types of fibromyomas The mortality was 6 2 per cent excluding the twelve cases in which lesions elsewhere were responsible for the fatal outcome There were no deaths in 1925 One of the fibromyomas weighed over 22 pounds, and in one case there was such a crop of submucous fibromas that the uterus could scarcely be recognized

Revista de la Soc. de Higiene y Microb., Buenos Aires

1: 1 10 1925

*Skin Test for Typhoid Germinal Rodriguez —p 1

Typhoid Skin Test —Germinal Rodriguez years of tentative research in this line have demonstrated that a suspension of two millions of killed typhoid bacilli (in 0 1 cc of a typhoid vaccine) injected intradermally induces a characteristic reaction if the subject has typhoid, and presumably also if he is susceptible to typhoid, otherwise not He was unable to isolate a toxin potent enough for such tests, but as typhoid immunity is more bacteriolytic than antitoxic, he believes that the vaccine emulsion answers the purpose better After the routine antityphoid vaccination, this test should elicit a negative response The prognosis is grave if the reaction becomes negative in the course of an unmistakable case of typhoid

Beitrage zur klinischen Chirurgie, Berlin

135: 569 735, 1926

The Blood with Cancer H F Buttner —p 569
*Supravital Staining of Pus Cells H v Losecke —p 587
Autolysis and Vital Stains B Brandt —p 595
Deforming Juvenile Osteochondritis O Pollwein —p 605
Myxedema After Thyroidectomy P Seulberger —p 624
Tuberculosis of the Knee F Martens —p 631
Gaging the Deep Roentgen Dose H Rahm —p 660
Bacteriology of the Gallbladder N v Hedry —p 665
Periarterial Sympathectomy K F Schmidhuber —p 675
Furuncles of the Face E Melchior —p 681
Central Ruptures of Liver from Contusion F Andersson —p 696
Ruptures of Diaphragm from Contusion F Andersson —p 711
The Os Tibiale Externum C Barthels —p 729

Supravital Staining of Pus Cells —*Losecke applied Seyderhelm's method* (supravital staining with a mixture of trypan blue and congo red) to the examination of wound secretion and exudates If the latter are not infected, the cells do not accept the dye In purulent exudates or wound secretions many cells are dead and consequently they take the stain.

Deutsches Archiv fur klinische Medizin, Leipzig

150 315 380 (March) 1926

*Genesis of Obesity S Lauter —p 315
Gastroscopy of the Pylorus W Sternberg —p 366
*Gastric Secretion in Tuberculosis F Delhougne —p 373

Genesis of Obesity - Lauter found a relatively lower basal metabolism only in some of his patients with the so-called endogenous type of obesity The absolute figures were always high He found no differences in the specific dynamic action of the food nor in the increase of oxygen consumption after exertion in the obese and in the normal He believes that the tendency of the obese to restrict movements accounts for the storage of fat The endogenous form of obesity differs in his opinion from the exogenous only in the endocrine etiology of the lack of impulses for movements

Gastric Secretion in Tuberculosis —Delhougne found that patients suffering from pulmonary tuberculosis react only slightly and slowly to secretory stimuli Active tuberculosis entails regularly a subacidity

Deutsche medizinische Wochenschrift, Berlin

52 389 430 (March 5) 1926

*Fever Treatment of Multiple Sclerosis Dreyfus and Hanau —p 391.
*Immunization Against Tuberculosis H Langer —p 396
A Reflex in Hyperthyroidism M Serejski —p 399
*Drainage After Laparotomy W Pohl —p 400
Alkali Treatment of Superacidity F Weigert —p 401
*Cerebrospinal Fluid Test F Bloch and H Rosenfeld —p 403
*Structure and Function of the Capillaries J Tannenberg —p 404
Toxicosis of Infants P Heim —p 404
Treatment of Toxicosis in Infants E Nassau —p 407
*Insulin in Toxicosis of Infants R Wagner —p 409
Peculiar Rashes in Infants Engel —p 410
Present Status of Tetany H Behrendt —p 411
Pneumonia of Lower Lobe Engel —p 413
Occupational Diseases Teleky —p 413
Flexner's Medical Education H Durck —p 415 Cen p 457

Fever Treatment of Multiple Sclerosis —Dreyfus and Hanau induced fever in treatment of multiple sclerosis patients. They observed some improvement with typhoid vaccine, and gained a decidedly favorable impression with malaria treatment in eleven out of twelve cases

Immunization Against Tuberculosis — Langer injected guinea pigs with his vaccine, consisting of killed young cultures of tubercle bacilli These animals survived an intracutaneous injection of tubercle bacilli on an average about twice as long (six and a half months) as the controls

Reflex in Hyperthyroidism —Serejski observed a local redness and perspiration in the thyroid region after injections of pilocarpine in patients with symptoms of hyperthyroidism. He calls the phenomenon the 'regional vegetative reflex"

Drainage After Laparotomy.—Pohl avoids infection of the main suture by making a small incision to one side and draining through it The method is similar to that of Tschassownikoff

Cerebrospinal Fluid Test.—Bloch and Rosenfeld have devised a new colloidal test for inflammatory changes in the cerebrospinal fluid. They base it on the fact that with p_H of 5 the globulins are positively charged while the albumins have a negative charge. With this actual acidity the latter increase the flocculation of night blue by electrolytes; the former stabilize the colloidal solution. The results of the test corresponded to the premises, flocculation occurring in inflammations of the meninges, while the majority of fluids taken from general paresis patients inhibited flocculation.

Structure and Function of the Capillaries.—Tannenberg examined by direct inspection the capillaries in the pancreas and mesentery of living rabbits and frogs. An active contraction is caused by the adventitia cells in the rabbit; the endothelial cells seem to contribute to it in frogs.

Insulin in Toxicosis of Infants.—Wagner advises in desperate cases of toxicosis in infants to use the method he devised with Priesel. They inject a certain quanity of insulin, and from forty-five minutes to an hour later, give an intravenous injection of 150-300 cc. of a 10 per cent solution of dextrose. One unit of insulin should correspond to 50 cc. of this solution. The immediate effect is excellent, but a relapse occurs within twelve to twenty-four hours unless the condition of the intestine has improved. They had to repeat the treatment in certain infants up to five times.

52: 431-472 (March 12) 1926

*Testing of Arsphenamine. W. Kolle.—p. 431.
*Tuberculin Plus Vaccinia. E. Moro and W. Keller.—p. 433.
*Parasitic Origin of Cancer. F. Blumenthal.—p. 435. Begun, p. 389.
Chemotherapy of Cancer. C. Lewin.—p. 438.
*Virus of Smallpox and Herpes. H. Heymann.—p. 442.
*Silent Infection in Weil's Disease. H. Reiter.—p. 445.
*Epidemic Angina Pectoris. H. Kohn.—p. 447.
Roentgen Rays and Organs. G. Gabriel.—p. 449.
Postoperative Internal Hernia. W. Zoefgen.—p. 450.
Hematoma of Abdominal Wall. H. Weitz.—p. 450.
*Cyanide Poisoning from Shoe Cleanser. H. Ullmann.—p. 451.
Treatment of Asthma by Hypnosis. E. Jacobi.—p. 452.
Balneotherapy of Pulmonary Tuberculosis. Kaminer.—p. 454.
Occupational Diseases. Teleky.—p. 456. C'tn.

Testing of Arsphenamine.—As the German patent protecting salvarsan has expired, Kolle has worked out a method for determining the toxicity, and also the curative value of different brands of arsphenamine. Since the resistance of the animals varies, as well as the virulence of the trypanosomes which are used for testing, a standard arsphenamine has been taken for comparison. After this, clinical tests are necessary to avoid the angioneurotic syndrome.

Inoculation with Tuberculin plus Cowpox Virus.—Moro and Keller have made further experiments on the effect of intracutaneous injections of tuberculin plus cowpox lymph. Concentrated glycerol bouillon injected instead of the tuberculin produced the same allergy. A tuberculin free from albumose is less active. Killed lymph is not suitable, but a transitory slight tuberculin allergy was observed after vaccination (without tuberculin). Simultaneous injection of cowpox and old tuberculin on different parts of the body produced the tuberculin allergy.

Parasitic Origin of Cancer.—Blumenthal surveys the recent research on the parasitic origin of cancer and especially the bacillus cultivated by Auler, Meyer and himself from human cancers. They produced cancer in animals by injecting it.

Virus of Smallpox and Herpes.—Heymann quotes Jenner's observations on inhibition of the development of the smallpox vaccine pustule in subjects with herpes or other skin disease entailing serous secretion.

Silent Infection in Weil's Disease.—Reiter produced with attenuated cultures a silent Weil infection in guinea-pigs. The animals for a few weeks resisted reinfection. No silent infection was obtained in trypanosomiasis—probably because this disease does not cause immunity.

Epidemic Angina Pectoris.—Kohn investigated the original reports on the epidemic of angina pectoris on the gunboat *Embuscade* in 1862. Tobacco had often been incriminated, but it is more probable that lead was the cause.

Cyanide Poisoning from Shoe Cleanser.—Ullmann investigated the cause of general malaise and headaches in several girls employed in a shoe store. He found a considerable quantity of cyanide in a fluid shoe cleanser, manufactured by Whittemore Brothers in Boston. A mouse placed in a jar containing 1 cc. of the fluid died within two minutes. He suggests an international prohibition of similar preparations.

Klinische Wochenschrift, Berlin

5: 393-440 (March 5) 1926

Heart Neuroses. M. Matthes.—p. 393.
*Sanocrysin Treatment. H. Ulrici.—p. 398.
*Function of the Ovary. B. Zondek and S. Aschheim.—p. 400.
*The p_H and Disinfection. F. Keysser and O Ornstein.—p. 404.
Eidetic Phenomena. W. Jaensch.—p. 406.
*Water Metabolism and the Liver. L. Lenaz.—p. 410.
Treatment of Melanosarcoma. J. Borak and F. Driak.—p. 411.
Treatment of Pneumonia. J. J. Daichowski.—p. 412.
Duodenal Reflux. L. von Friedrich.—p. 413.
*Insulin and Diabetes. S. Dietrich et al.—p. 414.
*Allergy to Tuberculin. F. v. Groer et al.—p 414.
*Osteosclerosis Fragilis. H. Bernhardt.—p. 415.
Treatment of Gonorrhea. F. W. Oelze.—p. 417.
Distribution of Physicians. Hadrich.—p. 419.

"Sanocrysin" Treatment.—Ulrici had good results in superficial lupus with infiltration of the area with 10-15 cc. of a 2-3 per cent solution of "Sanocrysin," with an anesthetic. Tuberculosis of the larynx or mouth was not cured. He considers his results in pulmonary tuberculosis as fair.

Function of the Ovary.—Zondek and Aschheim implanted different pieces of human ovaries in mice in order to determine the points where the ovarian hormone is produced. In the postmenstrual phase, the retrogressing corpus luteum contains no hormone. The wall of the maturing follicle, the follicular fluid and the fully developed corpus luteum contain the hormone. It is present also in the corpus luteum of pregnancy and—during pregnancy—in the atretic follicles rich in theca cells. It is not certain whether the placenta produces or merely stores the hormone. They believe that the theca cells produce it.

The p_H and Disinfection.—Keysser and Ornstein find that the hydrogen ion concentration is perhaps the most important factor in the action of various disinfectants. Bacteria are killed almost instantly when it is optimal. They had excellent results in treatment of peritonitis with such fluids.

Water Metabolism and the Liver.—Lenaz believes that the assumption of a functional occlusion of the veins in the liver is superfluous. He thinks that the regulation of the water content of the blood is a function of the equilibrium between the hydration pressure of the blood colloids and the capillary pressure. If the former decreases (for instance, after drinking) the fluid filters into the pericapillary spaces—including those of the liver. Apart from the primary changes of hydration pressure, hydremia can occur only with a decrease of the capillary pressure. This may be due to weakening of the heart or to dilatation of the capillaries, especially in vagotonic reactions. A lower level of calcium seems to be responsible for it in the paradoxic epinephrine reaction, hydremia, hepatic opsiuria and hemoclastic crisis.

Insulin and Diabetes.—Dietrich, Häusler and Loewi found that human erythrocytes absorb more dextrose from rabbit plasma taken two hours after an injection of insulin than from the normal plasma. Since insulin increases in vitro the absorption of glucose only in the presence of plasma or serum, they conclude that it acts only indirectly in modifying the serum. It seems that the substance which is directly responsible for the increased avidity of erythrocytes, is dialysable. They found also that the serum from diabetic patients or animals with epinephrine glycosuria inhibits the absorption of dextrose by normal erythrocytes. The dialysate of such serums inhibits it also.

Allergy to Tuberculin.—Gröer, Progulski and Redlich confirm the artificial production of tuberculin allergy by injection of a mixture of tuberculin and hog serum: Guinea-pigs sensitized with it reacted with an anaphylactic shock to reinjection of the mixture, but not to hog serum alone, and only slightly to tuberculin. Injection of a mixture of hog serum with cowpox vaccine killed by heat produced a slight tuberculin allergy in children.

Marble Bones Disease (Osteosclerosis Fragilis).—Bernhardt reports a typical case of Albers-Schönberg's disease, with spontaneous fractures, diffuse endostal osteosclerosis, disturbance of growth, suppurations, splenomegaly and enlargement of lymph nodes with myeloid metaplasia. The anemia is secondary—due to the loss of functioning bone tissue. Splenectomy has been suggested, but this is irrational since the spleen is the most important seat of the regeneration of the blood in such patients. Treatment with ammonium chloride did not help much.

5: 441-488 (March 12) 1926

Lipoid Nephrosis V Kollert —p 441
*Pure Cultures of Spirochetes H Reiter —p 444
*The Blanching Phenomenon Zlatogoroff and Derkatsch —p 445
*Skin and Lymph Nodes H Martenstein and S Amster —p 449.
Registration of Fetal Heart Sounds G Schwarz —p 451
Calcium, Thrombin and Coagulation E Kaufmann —p 453
Concussion of the Brain A Ritter —p 456
Hysteriform Conditions R Thiele —p 460
Etiology of Lentigo Nevus F K Scholl —p 463
Swimming Pool Conjunctivitis M Fischer —p 464
*Dextrose and Cancer P Rondoni —p 465
*Pharmacology of Sulphur E Burgi and T Gordonoff —p 466
Dietotherapy of Tuberculosis E Helmreich —p 466
Neurosis in a Violinist R Allers and W Kern —p 467.
Prognosis of Hypertension R Ehrstrom —p 469
Is Cancer an Infectious Disease? Teutschlaender —p 470
Three Way Cock in Puncture and Infusion H Strauss —p 485

Pure Cultures of Spirochetes.—Reiter describes solid and fluid mediums for cultures of spirochetes. They are suitable for preparation of Klopstock's antigens He also mentions therapeutic results of injections of living *Spirochaeta pallida* cultures in general paresis patients after the treatment with therapeutic relapsing fever had failed

The Blanching Phenomenon.—Zlatogoroff and Derkatsch obtained the Schultz-Charlton blanching phenomenon with the serums from animals immunized with the streptococcus toxin or immunized with living virulent cultures of streptococci Killed germs induced formation of agglutinins and complement fixation antibodies, but no blanching properties They conclude that the substances responsible for the Schultz-Charlton phenomenon are formed in response of the organism to the scarlet fever streptococcus. They are not present in the euglobulin fraction of the serum.

Skin and Lymph Nodes in Tuberculosis.—Martenstein and Amster infected guinea-pigs intracutaneously with 0.01 mg. of tubercle bacilli. They observed a local periodic exacerbation, healing and recurrence. The regional lymph nodes showed at the same time an almost opposite curve—swelling with the regression of the cutaneous process and vice versa The smaller the infecting dose, the larger were the lymph nodes in their experiments.

Dextrose and Cancer.—Rondoni found that injections of dextrose had an enhancing action on the development of precancer warts on the tarred ears of rabbits.

Pharmacology of Sulphur.—Burgi and Gordonoff found two or three times as much glycogen in the livers of rabbits fed for a longer period with sulphur as in the controls They point to the sulphur content of insulin found by Abel and Geiling.

Medizinische Klinik, Berlin

22: 357-396 (March 5) 1926

*Spasmophilia. W. Stoeltzner —p 357.
Pathogenesis of Tetany H. Beumer —p 360.
Tonic Innervation J Pal —p 363
Roentgen Diagnosis of Pulmonary Tuberculosis W Olshausen —p 364.
Subcutaneous Rupture of the Pancreas G H Feist —p 366
Syphilis of Cranial and Spinal Nerves W. Mestitz —p 369
*Hormones and Vitamins L Wolfer —p 372
Atresia of Vagina E Reiner —p 373
*Quinine Rash E Zacharias —p 373.
Herpes Zoster and Chickenpox E Lauda and E. Silberstern —p. 374
Arteriosclerosis and Accident Insurance. W Brandis —p 377.
Treatment of Gout A Mahlo —p. 379.
Insurance Medicine P. Horn —p 382
History of Treatment of Wounds. H. Stegemann.—p 393.

Spasmophilia.—Stoeltzner restricts even in latent spasmophilia the daily intake of cow's milk to one half of the previous amount, giving a pint as the maximum In manifest spasmophilia, fasting for a day and a milk-free diet later are indicated. The food, however, must not consist solely of sweetened flour gruels; bouillon, proteins, fat have to be added. A teaspoonful of cod liver oil should be taken twice daily for months. In grave conditions, he prefers to give for a few days twice daily 5 Gm. of the solution: phosphorus, 0.01; oleum jecoris aselli, 100.0 parts. With persisting laryngospasm, large doses of calcium may be necessary: he gives then for five hours every hour 1 Gm. of dry calcium chloride (or 2 Gm of the crystallized), then every three hours another gram, thus administering about 10 Gm. within the first twenty-four hours. After this 1 Gm. of the dry calcium chloride should be given six times daily. The doses should be reduced with clinical improvement, returning to the original large amounts if the spasm reappears.

Hormones and Vitamins.—Wolfer found with Bock's method in the blood from patients with extremely acute psychoses large amounts of anisotropic droplets. He observed similar droplets in various vegetable and animal extracts containing vitamins.

Quinine Rash.—Zacharias' patient had an itching vesicular eruption on the inner side of thighs, the scrotum and the penis. He had had a similar rash on the scalp before, after using a hair tonic containing quinine. This time the eruption was due to the quinine in the contraceptive preparation used just once by his wife.

Monatsschrift für Geb. und Gynäkologie, Berlin

72: 249-376 (March) 1926

Early Diagnosis of Pregnancy A. Dienst —p 249.
The Campaign Against Syphilis F. A. Scheffzek.—p. 256.
Polyps on the Placenta. W. Rosenstein —p 264.
*Pregnancy Ileus L Luchs —p 270
*The Kielland Forceps H Baumm.—p. 284
Smallpox in a Maternity Hospital G. Hoppe —p 290
*Congenital Dislocation of the Hip Joint. H. Krukenberg —p. 295.
Virulence of Streptococci and Staphylococci G J. Pfalz.—p. 298.
Adenomyosis B Langen —p 303
*Ovarian Hemorrhage or Pregnancy? M. Traugott.—p 307.
Incarceration of Myomatous Uterus. F. Istel —p 315.
Puerperal Vesicovaginal Fistula E Graff —p 319
Vagina Made From Bladder H. H. Schmid.—p. 330.

Pregnancy Ileus.—Luchs draws attention to pyelitis among the causes of ileus in pregnancy.

The Kielland Forceps.—Baumm extols the advantages of the Kielland forceps for the practitioner. He is opposed to Frankel's advice to perform cesarean section if the high forceps fails Even with slight traction, made by a good obstetrician, the forceps may injure the child's brain gravely. Failure of forceps is an indication, he says, for perforation and for nothing else.

Etiology and Prevention of Congenital Dislocation of the Hip Joint.—Krukenberg points out that a paper on this subject would be out of place in a journal devoted to obstetrics, if it were not possible for the obstetrician to prevent the dislocation The anomaly is not to be found in new-born infants. There is only a predisposition in the smallness of the ossification nucleus of the head of the femur, and shallowness of the acetabulum Anteversion of the neck of the femur exaggerates this predisposition The torsion is present in 20-30 per cent of the new-born, in 12 per cent of adults, and does not occur at all in fetuses of 4 months and in quadrupeds. With extension of the femur, its head leaves the anterior margin of the acetabulum in proportion to the degree of anteversion. The simultaneous stretching of the iliopsoas increases the anteversion further. These considerations as well as the frequency of dislocation in children born in breech presentation, led him to attempt to produce a similar condition in dogs. He put three puppies on the fifth day, without undue force, in a plaster cast which kept the hind legs extended for fourteen days The male puppy remained normal, but the two females developed gradually all the signs of "congenital" dislocation of the head of the femur. These experiments confirm the fact that the dangerous stage for dislocation occurs at the time of the extension of the thigh It is therefore essential for its prevention to avoid wrapping up the baby's legs in the extended position and to take care to refrain from trying to teach the child to walk until it changes spontaneously from crawling to the erect position This applies with special force if the child was born in breech presentation, and if dislocation of the hip joint has otherwise occurred in the family. Roentgen examination is necessary with the slightest disturbances in gait, since a beginning dislocation may be cured without operation or plaster cast.

Ovarian Hemorrhage or Pregnancy?—Traugott admits the possibility of grave hemorrhage from the ovary only in leukemia, phosphorus poisoning, extensive burns, hemorrhagic diathesis, hypertension and neoplasms or acute torsion. All the other reported instances were, probably, overlooked extra-uterine (usually tubal) pregnancy. Of such was his case with apparent bleeding from a large ruptured cyst in the ovary in a young unmarried woman. The ovum was found in the abdomen but the tube was macroscopically normal. Sections revealed syncytial cells resembling chorion.

Münchener medizinische Wochenschrift, Munich

73: 311-352 (Feb. 19) 1926

Tabetic Atrophy of Optic Nerve. C. Behr.—p. 311. C'td.
*Action of Sanocrysin. E. Le Blanc.—p. 313.
*Specific Dynamic Action. K. Bahn—p. 315.
Chronic Gastritis. R. Korbsch.—p. 317.
The Dead Point in Roentgenotherapy. Thedering.—p. 319.
Diffusion of Local Anesthetics. R. E. Liesegang.—p. 320.
Malta Fever. F. Weyrauch.—p 321.
*Phenobarbital in Breast Milk. Frensdorf.—p. 322.
Obstetrics from Medicolegal Standpoint. M. Hofmeier.—p. 323.
Diet in Grave Tuberculosis. E Andersen.—p. 324.
Spirochetes in Poultry. A. Demnitz.—p. 325.
Scrofula. F. Jamin.—p. 326. C'cn.
Earth Alkalis. E. Wiechmann.—p. 328.

Action of "Sanocrysin."—Le Blanc tried "Sanocrysin" at Brauer's clinic in the original dosage (0.5-1 Gm.). The toxic reactions were the same in tuberculous and nontuberculous subjects. He does not hesitate to declare that the shock is a manifestation of metal poisoning—not of cleavage products from the tubercle bacilli. He saw no demonstrable specific action of the drug in tuberculosis.

Specific Dynamic Action.—Bahn finds that the intensity of the specific dynamic action of proteins is determined by the tonus of the vegetative nervous system. A certain inverse proportionality between the height of the basal metabolic rate and of the specific dynamic actions was confirmed. He thinks that various hormones change the specific dynamic action indirectly by influencing the basal metabolic rate.

Phenobarbital in Breast Milk.—Frensdorf gave an epileptic woman three times daily 0.1 Gm. of phenobarbital for a few days before and after labor. Her child was normal at birth, but became gradually more and more sleepy. She recuperated after the mother had discontinued the drug.

73: 393-432 (March 5) 1926

*Treatment of Surgical Infections. A. Krecke.—p. 393.
Progressive General Paresis. F. Plaut and F. Jahnel.—p. 396.
German Rhubarb. H. Fühner.—p 400.
Reflexes of Abdominal Organs. W. Ruhmann.—p. 401.
Exhumation and Social Insurance. E. Franck.—p. 402.
Terminal Disinfection. W. Rimpau.—p. 404.
Periodic Examinations. F. Kaufmann.—p. 406.
Technic for Phototherapy. P. Stumpf.—p. 408.
Digestion and the Heart. F. Crämer.—p. 409.
The Plague in Russia. H. Zeiss.—p. 411.

Treatment of Surgical Infections.—Krecke extols the benefits of Bier's method of treating infections from instruments contaminated with pus. He uses hot dressings and twice daily a local bath of half an hour to an hour's duration in hot chamomile tea. No aluminum subacetate or alcohol dressing should be used. As soon as pus appears (not sooner), surgery is necessary. Several small incisions are preferable to one large. The large tumors of cervical lymph nodes, which are frequent after scarlet fever and measles, often yield to hot applications. A patient with a furuncle of the face—no matter how innocent it looks—should stay in bed. Every occupation—including the mental—as well as all talking and company are prohibited. An ointment should be applied locally and be covered with a small hot chamomile bag. An elastic band, 2 cm. wide is applied to the neck and drawn as tight as the patient can comfortably stand. It should stay on every day from noon till 8 a. m. the next morning. The core must not be expressed, and no superficial incision made. The patient must not get up until the core has been cast off. Local injections of chemotherapeutic preparations are liable to injure the tissues. Many patients with empyema of the pleura, especially in children, recover after simple punctures. An early incision is necessary in a panaritium, acute purulent inflammation of the lower jaw and the deep phlegmon of the neck or forearm. General anesthesia is essential. With a mere paronychia, the phalanx should be smeared thickly with gray ointment and covered with a protecting dressing. Slight pain occurs on the second day, but the finger is healed within eight days.

Wiener klinische Wochenschrift, Vienna

39: 265-292 (March 4) 1926

Angina Pectoris. L. Braun.—p. 265. C'td.
*Action of Roentgen Rays. G. D. Lieber.—p. 269.
Syphilitic Cachexia K Herman.—p. 272.
Peptic Ulcer and Test Meal. E. Schütz.—p. 272.
Immunology and Epidemiology. W. Bohme.—p. 273. C'cn.
Treatment of Pulmonary Tuberculosis. F. Eckhart.—p. 276.
Treatment of Facial Paralysis A. Fuchs.—p. 277. C'cn.
A Social Insurance Sanatorium. E Suess.—p. 279.
Syphilis of Respiratory Passages. M. Hajek. Supplement.—p. 1-12.

Action of Roentgen Rays.—Lieber believes that the antagonism between potassium and calcium is closely connected with the Donnan equilibrium. With a special method, he found in sections from skin a large amount of potassium around the hair follicles and in the epidermis. It increases the permeability of the cell wall. Calcium is present in the connective tissue only in a regular network arrangement. After exposure of the skin to a depilatory dose of roentgen rays, the amount of potassium decreases after five days, and the calcium moves toward the epidermis and around the hair follicles. This process progresses until the fourteenth day—when the loss of hair suddenly sets in—the potassium is no longer present in the epidermis, and a layer of cells containing plenty of calcium has practically usurped the place of the original epidermis. Before the beginning of any visible repair, the surroundings of the hair follicles and the regenerating epidermis fill with potassium, and the calcium recedes. He is extending this research to roentgen treatment of tumors.

Zentralblatt für Gynäkologie, Leipzig

50: 577-640 (March 6) 1926

*Capillaries in the Pregnant. Pischzek and P. Schmidt.—p. 578.
Echinococcosis of the Ovary. J. W. Miller.—p. 585.
*Rupture of Uterus After Cesarean Section. M. Wetterwald.—p. 592.
A New Forceps E. Zweifel.—p. 604.
Perforation of the Uterus F. Süssmann.—p. 606.
Histology of Chorea Gravidarum. K. v. Lehoczky-Semmelweis—p. 608.
"Obstetric Rectal Examination." Dipper.—p. 611.
*Older Primiparas. R. Remmelts.—p. 613.
Prolapse and Constitution K. Burger.—p. 615.
Treatment of Retroflexion. A. Werner.—p. 621.

The Capillaries in the Pregnant.—Pischzek and Schmidt observed pronounced tortuosities both in the afferent and the efferent capillaries of skin in three women with hydramnion. The capillaries changed back to normal after the childbirth. There were other changes in pregnant women with edema.

Rupture of Uterus After Cesarean Section.—Wetterwald points to the lessened danger of rupture of the uterus in a subsequent labor after cervical cesarean section as compared with the classic technic. Placenta praevia increases the danger of rupture.

Older Primiparas.—Remmelts concludes from his material of 103 primiparas over 30 years old that the question of difficult labor in them is merely a question of constitution. Those with hypoplastic sex organs, late menarche, slight menstruation, small fertility, and tendency to abortions, tend to have a prolonged labor.

Mede. v. d. Dienst der Volksgezond., Batavia

345-462, 1925 English Edition

Annual Report of the Civil Medical Service in the Netherlands East Indies for 1923—p 345

1-98, 1926. English Edition

*The Molucca Islands F Kopstein.—p. 1.
Classification and Habitat of Local Mosquitoes. E. Rodenwaldt.—p. 79.

The Moluccas.—Kopstein's official mission to these islands was to seek for cases of leprosy, but he reports on general medical conditions and habits. Among the peculiar customs described is that small separate huts are provided to which the women must change during the menses, and where the women are delivered. From the first consciousness of a pregnancy, sexual intercourse with the husband is forbidden. Leprosy is common, and is increasing in certain regions; no precautions are taken against infection by it.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 509-624 (Feb. 6) 1926

*Fever in Course of Syphilis. C. W. Bottema.—p. 510.
A Diverticulum at the Duodenojejunal Flexure. Orbaan.—p. 516.
*Diagnosis of Death of Fetus. J. van E. Tengbergen.—p. 522.
*Pituitary Extract to Initiate Labor at Term. M. H. G. A. Tholen.—p. 526.
The Manuscripts of Guy de Chauliac, M.D., 1363. J. G. de Lint.—p. 530.
*Hippocrates in Art. J. B. F. van Gils.—p. 542.
*Medical Topics at International Congress on Goat-Breeding. E. Brouwer.—p. 576.

Fever in Course of Syphilis.—Bottema warns the general practitioner not to be misled by the presence of fever to overlook the possibility of a syphilitic origin for the symptoms presented, although fully 75 per cent of all cases of syphilis run their course without fever. In one of three typical cases described, there was no other manifestation of the syphilis at the time, and the only proof of the nature of the high fever returning every day was its immediate subsidence after a single injection of neo-arsphenamine. In another case the fever accompanied bronchitis, with headache and cough but no expectoration, four or five years after the acquiring of syphilis. There was also a diffuse roseola, similar in every respect to a primary roseola. The symptoms, including the bronchitis, all promptly subsided under treatment with arsenicals. He adds that although the whole of pathology is not included in tuberculosis, syphilis and diatheses, yet these three should always be held in mind.

Roentgen-Ray Diagnosis of Death of the Fetus.—Tengbergen found Spalding's sign (lapping of the skull bones) in ten of eighteen cases of intra-uterine death of the fetus examined with the roentgen rays. The age of the fetus ranged from 26 weeks to term. The heart sounds had been heard up to seventy-two hours before in one case and fifty-six days in another. The fetuses always proved to be more or less macerated. In one of the two cases in which this sign was probable but not distinct, there was hydrocephalus. In two others, gas in the intestines obscured the findings. In two other cases the skull bones gaped; he has never beheld this in a normal pregnancy, and thinks that it can be accepted as a sign of death of the fetus at least eight days before. In these cases the fetus could not have been dead for more than eleven and thirty-six days. The pregnancy was in the eighth or ninth month and the fetuses were macerated and putrid. In two other cases the first examination was made during the interval between the lapping of the bones and the gaping; the roentgenogram showed apparently normal conditions as to the interline of the cranial bones, but after expulsion of the macerated fetus the bones had the same loose feeling inside the scalp as in the other cases. Comparison of roentgenograms from previous years revealed the lapping or the gaping of the cranial bones as never occurring in normal cases. The physiologic lapping of the bones during actual delivery can never lead to confusion. Another sign of the death of the fetus is the small size of the fetus in comparison to the phase of the pregnancy. The inability to obtain clear pictures of the skull bones—other conditions being favorable—suggests death and decalcification of the bones. The article is illustrated.

Pituitary Extract to Initiate Labor at Term.—Tholen gave an intramuscular injection of a small dose of pituitary extract to forty-eight women who were waiting for labor at term, usually after rupture of the bag of waters. Labor pains followed in from half an hour to an hour in 76 per cent of the primiparas and in 77 per cent of the multiparas. In five cases requiring premature delivery, the pituitary treatment had no apparent effect. In those cases in which only false labor pains followed the pituitary extract, a sedative was injected at once. The pituitary extract was preceded with castor oil, and the injection was repeated once or twice. The fetal heart sounds were constantly supervised, and no untoward by-effects were observed in either mother or child.

Hippocrates' Visit to Democritus.—Van Gils continues his study of the works of art of the Amsterdam school which date from the seventeenth century and portray what he accepts as the visit of Hippocrates to Democritus. They have hitherto been labeled "Saul's Visit to Samuel," "Antiochus' Visit to the Oracle," or "Heraclides' Visit to Democritus."

Tuberculosis in Goats and Goat's Milk Anemia.—Brouwer states that the second international congress on goat breeding was held recently at Freiburg, and Zwagerman and Scheurer presented a survey of the goat's milk anemia question, while Koestler reported a comprehensive physical and chemical study of goat's milk compared with cow's milk. De Blieck reported that he had found tuberculosis in twenty-four of about 500 goats examined in the Netherlands. Timmermans' figures in 1910 were 0.153 per cent of 49,030 goats in the Netherlands to that date.

1: 625-740 (Feb. 13) 1926

*Preparedness for Marriage of Female Organs. T. H. van de Velde.—p. 626.
*The Mechanism of Diabetes. B. Sybrandy.—p. 632.
*Means to Reduce Intra-Ocular Tension. De Jongh and Wolff.—p. 647.
*Clinical Value of Cholesterol Tests. S. Brandes.—p. 650.
*Cultivation of Actinomyces. G. A. Rademaker.—p. 658.
*Hydrocephalus and Breech Presentation. T. H. M. Platte.—p. 664.
Two Attacks of Measles. C. C. van der Heide.—p. 665.

Preparedness for Marriage of the Female Sex Organs.—Van de Velde expatiates on the disease and unhappiness that might be prevented if sexual infantilism were corrected before marriage so that the sexual life could be normal from the first. He pleads for rectal examination to ascertain the condition of the sex organs, and appropriate treatment if found underdeveloped. The examination could be made without the girl's understanding its purpose, on the occasion of some indisposition or examination for life insurance. If the uterus is not over 3.5 cm. long, the condition is rudimentary rather than infantile, and not much can be hoped from treatment. But with infantile organs, ovarian treatment, diathermy and vibration massage of the uterus may accomplish much. The latter alone may suffice. The uterus is pressed against the abdominal wall by the finger in the rectum, and the massage instrument is applied to the abdominal wall. At necropsies in cases in which diathermy had been applied, he has been amazed at the intense circulation through the parts and the swelling of the tissues, testifying to the effect of the diathermy while warning of the necessity for caution. This triple treatment may cure menstrual disturbances and improve the general condition. He applies the vibration massage every day or two for seven to fifteen minutes, in a six or eight weeks' series, with a second series at need, a long pause between.

Mechanism of Diabetes.—Sybrandy explains that the hyperglycemia in diabetes is due to the defective metastasis of glucose, that is, the distribution of glucose to the liver, heart and other tissues. Insulin promotes this metastasis of glucose—the blood-sugar circuit, as he calls it—the liver and muscles constantly producing glucose which is transformed into glycogen and back again.

Means to Reduce Intra-Ocular Tension.—De Jongh and Wolff announced in 1924 that the serum of animals which had been having convulsions contains some substance which seems to have the power to reduce intra-ocular tension. They proved this with secondary glaucoma in rabbits, and they here confirm these findings and also report the reduction of intra-ocular pressure in a rabbit with spontaneous, natural glaucoma.

Clinical Import of Cholesterol.—Brandes concludes the report on his extensive research on cholesterol with the statement that it has no value in the differential diagnosis of dubious gallstone cases nor in the prognosis in nephritis or diabetes. But in pernicious anemia, estimation of the cholesterol may be instructive. There is evidently some connection between cholesterol and the pernicious process, but its nature is not known. The attempts to treat pernicious anemia with cholesterol have never proved successful.

Mycoses.—Rademaker describes four cases of actinomycosis and two of bothriomycosis; in a third case, with the presumptive diagnosis of the latter, the affection proved to be molluscum contagiosum.

Delivery of Child with Hydrocephalus in Breech Presentation.—Platte introduces a trocar into the fetal skull through the mother's abdominal wall when all means to deliver the child without perforation have failed. The fluid spurts and the obstacle to delivery is thus removed.

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THE RECOGNITION OF A BIOLOGIC DIFFERENTIATION IN THE WHITE BLOOD CELLS

WITH ESPECIAL REFERENCE TO BLOOD TRANSFUSION *

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The development of the supravital technic for the study of living blood cells in vitro [1] has made available, for the first time, a simple, adequate method for the qualitative analysis of the white blood cells. It was the attempted application of this procedure to a study of the problem of the possible relationship of the white blood cells to the unexplained reactions following the transfusion of matched red blood cells that led to the results presented briefly at this time.

During some experiments on rabbits, several years ago, in which two groups of individually matched animals were used for repeated transfusions of blood, it was noted that there was a marked difference in the clinical manifestations, following transfusion in certain recipients. A study of the peripheral blood at frequent intervals during the occasional, more severe, clinical reactions following the matched blood transfusions directed our attention to the white blood cells. Not only did the animals almost always show quantitative diminutions in the white count, but in the supravital preparations there was marked evidence of destruction of white blood cells in the greatly increased amount of cellular débris, obviously of such origin, in the blood. This condition was in sharp contrast to the findings in leukopenic states, caused by other experimental procedures, in which the decrease in the total white count is not accompanied by any evidence of increased cellular disintegration, the transitory nature of the leukopenia in many instances indicating simply a circulatory disturbance, with an accompanying redistribution phenomenon. When blood from a rabbit is given to a recipient, in which the serum agglutinates the red blood cells of the donor, a sudden convulsion, followed by immediate death, is the result, often while the blood is still being injected. On the other hand, the reactions that we have observed accompanying the evidences of the destruction of white blood cells come on within from half an hour to two hours of the transfusion, and are typical of foreign protein reactions in general. It was thought that if the recipient's serum should be found to be specifically leukotoxic in character, the disintegrating white blood cells could conceivably form the source of the foreign protein in these reactions. As a simple, practicable and quick means of determining in vitro *the probable relative toxicity of specific serums to* specific white blood cells, when transfusion is contemplated, the following procedure was devised and has been used for the past year and a half in both theoretical and practical determinations.

TECHNIC

First, it is essential that the slides and cover glasses for the supravital preparations be free of grease and neutral in reaction (nonacid). Glassware is placed in a saturated solution of potassium bichromate in concentrated sulphuric acid for three or four days, and then washed in running tap water for twelve hours. It is rinsed in three changes of distilled water; the slides stand over night in the last change. It is stored in 80 per cent alcohol. It is dried with clean, new gauze and flamed. If a dye is used (it is not essential), vital neutral red is recommended. Grübler's prewar, vital neutral red is made up in saturated solution in neutral absolute alcohol.[2] Twenty-five drops of the saturated solution in 5 cc. of absolute alcohol gives a nontoxic concentration of the dye for use in examinations of normal blood. The slides are flooded with the dye and then drained; they are allowed to dry in the upright position, which insures a thin, even film of the dye on the slide. A film of blood made on such a slide, when kept in the warm box at 37.5 C., will show viable cells for as long a period as a film made without the dye. Moreover, the dye makes the individual cells much more easily visible and the identification of cell types more certain. The prime requisites, it is to be remembered, however, are motility of the cells and freedom from any technical cellular depressant. The weight of the cover slip will cause the drop of blood to spread to the desired extent, provided the glassware is clean. It is sealed with petrolatum of a higher melting point than the temperature at which the examination is to be made. Either a warm box or a warm stage, preferably the former, may be used. The uniformly constant temperature conditions are an essential.

The cover slips are prepared in a similar way. They are flooded with the citrated or oxalated plasma or blood serum that has been secured for grouping the red blood cells, and drained to one corner in the vertical position, the drop of plasma that forms there being carefully removed with a fine capillary pipet. This is necessary in order that the unevenness attendant on the drying of a large drop of plasma at that point may be avoided. From the finger or ear of the person whose white blood cells are to be tested, a drop of blood is taken directly on the cover slip, prepared with the dried serum, and dropped gently on the slide. If the blood does not promptly spread into a thin, even film, slight manipulation from the side, never a pressure from above, may be used. Immediately, on the same slide, and from the same or a subsequent drop of blood, the control film is made with a plain cover slip. Both are sealed with petrolatum, and, under proper temperature conditions, the control slip is looked at first, to make certain of the viability of the leukocytes. It is the comparison or contrast between the number of viable cells in the two preparations on which depends the determination of the compatibility of the plasma in question. Oxalate and citrate anticoagulants in themselves do not affect the white blood cells in this test. However, as will be seen from table 1, when a blood is leukotoxic, citrated or oxalated plasma is doubly destructive to the susceptible white cells. At certain times there are physiologic showers of the "nonmotile" leukocytes, described by Sabin and her co-workers [3] in 1925, which must be differentiated from the white cells specifically affected by the incompatible blood plasma. Both by the difference in physical characteristics and by their presence and number in the control film, it is readily possible to eliminate such preparations as *pseudopositives*. If the control film, at any time, contains a high percentage of the "nonmotile" leukocytes, it is advisable to make a second duplicate preparation, as this particular phase of the polymorphonuclear leukocyte is transitory and does not reflect the plasma effect so readily as does the actively motile form.

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[1] Sabin, F. R.: Studies of Living Human Blood Cells, Bull. Johns Hopkins Hosp. **34**: 277-288 (Sept.) 1923.

[2] Most of the domestic dyes at present are too toxic, even in high dilution, for supravital staining of living cells.

TABLE 1.—*Quantitative Data on the Disintegrative Effect of Incompatible Serums on Susceptible White Blood Cells in Vitro Over a Twenty-Four Hour Period* *

Time	Conditions	W. B. C.	Time	Conditions	W. B. C.	Time	Conditions	W. B. C.
11/17/25			11/19/25			11/19/25		
1:45	Control	6,600	2:30	Control	6,500	10:00	Control	6,200
	W. B. C. + serum	6,800		W. B. C. + serum	6,000		W. B. C. + serum	6,100
2:15	W. B. C. + serum	6,700	3:30	W. B. C. + serum	5,100	11:30	W. B. C. + serum	6,100
3:00	W. B. C. + serum	5,200	4:30	W. B. C. + serum	4,500	2:00	W. B. C. + serum	4,900
4:45	W. B. C. + serum	3,600	5:30	W. B. C. + serum	4,100	3:30	W. B. C. + serum	3,600
	Control	6,050		Control	6,200	4:30	W. B. C. + serum	3,300
11/18/25			11/20/25			5.30	W. B. C. + serum	2,700
1:00	Control	6,900	2:00	Control	5,500		Control	6,200
	W. B. C. + serum	1,100		W. B. C. + serum	3,800	11/20/25		
						10:00	Control	6,500
							W. B. C. + serum	2,500

* In cases in which no qualitative changes were noted in supravital studies, the total counts of controls with acetic acid only and of the cells exposed to serums ran parallel over corresponding twenty-four hour periods.

SPECIFIC LEUKOTOXINS IN HUMAN BLOOD PLASMA

As in the case of the red blood cells, so with the white blood cells, certain serums have a much more decided and rapid agglutinative effect on the red cells, or a disintegrative effect on the leukocytes, than others. When the bloods are compatible for leukocytes, all the different types of white cells are as motile as in their own plasma. In the majority of instances, when the white blood cells of one person are affected by the dried plasma of another individual, the effect is immediate and unmistakable; i. e., as soon as the preparation can be placed under the microscope, there is no doubt of the serious depression in activity of the leukocytes; many may be rounded up or fixed in the act of motile elongation or irregular, pseudopod formation; others, with increasingly sluggish movements, indicate their susceptibility and gradual yielding to some foreign depressant. It is not unusual to find all the leukocytes rounded up and shrunken, with irregular edges, as if becoming dehydrated. In the majority of instances, just preceding, accompanying or soon following this rounding up of the polymorphonuclear cells, with com-

TABLE 2.—*Five Different Series of Observations Representative of the Direct Relationship*

	Serum T 1 vs. Cells T 2 Nov. 29, 1924—10:00					Serum T 2 vs. Cells T 12 Nov. 30, 1924—10:00					
Concentration of serum	Control	100% Sodium Citrate Plasma	100% Serum	50% Serum	10% Serum	Control	100% Sodium Citrate Plasma	100% Serum	50% Serum	10% Serum	Control
Polymorphonuclears, active	90	6	36	55	58	73	4	25	45	74	73
round	0	74	38	25	16	0	75	57	23	2	0
vacuolated	0	3	9	7	4	0	4	4	2	6	0
old	0	0	0	0	0	0	0	0	0	0	0
	1	2	1	0	8	5	1	1	6	0	1
	0	0	0	0	0	0	0	0	0	0	0
	1	0	0	1	4	0	2	0	0	1	1
Myelocytes	0	1	1	1	0	0	0	0	0	0	0
Total myeloid	92	86	85	89	90	83	86	67	76	83	80
Lymphocytes, small	6	4	13	10	6	7	11	10	13	3	8
intermediate	1	0	1	1	0	6	0	2	4	10	8
large	0	0	0	0	0	2	1	0	2	0	2
Total motile	5	0	0	0	1	9	0	0	0	4	10
Total lymphoid	7	14	14	11	6	15	12	12	19	13	18
Monocytes, active	1	0	0	0	4	1	0	0	0	4	2
young	0	0	0	0	0	0	0	0	0	0	0
round, inactive	0	0	1	0	0	0	2	1	5	0	0
Total monocytes	1	0	1	0	4	1	2	1	5	4	2

* In the first two instances it will be seen that sodium citrate increases the effect of an already foreign serum, while the last case, in which there the fourth series of observations may be noted. In making the practical clinical test it is, of course, necessary only to make observations on two

plete cessation of all motility, appear vacuoles of increasing number and size, staining with the neutral red. These are probably vacuoles of degeneration and mark a further stage in the process of disintegration. In table 2 it will be seen that in one case cited (serum T 4 vs. cells T 6) the number of vacuolated cells, on immediate observation, was large. A nucleus with scattered granules, evidencing a ruptured membrane, gradually becomes a more frequent finding in such a film on standing. This indicates not only that the motility of the leukocytes is inhibited, but also that there are eventual cell rupture and disintegration, as the end-result of the exposure to these leukotoxic serums.

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[3] Sabin, Florence R.; Cunningham, R. S.; Doan, C. A., and Kindwall, J. A.: The Normal Rhythm of the White Blood Cells, Bull. Johns Hopkins Hosp. 37: 14-67 (July) 1925.

It is not only the polymorphonuclear leukocytes that are visibly affected by the occasional incompatible plasma. The lymphocytes lose all motility and perhaps are the first to show the effect of an unfavorable environment. We recognize in normal blood films three rather distinct sizes of lymphocytes, which have been separated, for convenience, into the small, the intermediate and the large. Many of the small, most of the intermediate, and only an occasional large lymphocyte show active motility. The type of movement of the leukocyte is that in which there is a marked forward streaming of the cytoplasm, as the pseudopodia advance, while the nucleus seems to be passively dragged along in the rear of the cell. In contradistinction to this pseudopodia-like motility of the cytoplasm of the polymorphonuclear cells, the lymphocytes move with the nucleus in the front end of the cell, seeming to be as actively involved in the motility as the cytoplasm itself. The nuclei show constant, inherent changes in shape as the cell advances, the cytoplasm following along to the rear. In our preparations the first, and in some instances the only, thing to be seen for some time is a rounding up of all lymphocytic nuclei and a shrinking of the whole cell, so that all appear as static small lymphocytes. However, the lymphocytes seem much more resistant to the disintegrative phase later.

The monocytes assume all manner of bizarre shapes, again suggestive of dehydration of the cytoplasm. They appear crumpled, fluted, with the centrosphere the focus or center of the peculiar, cracking cytoplasm. All motility is, of course, gone.

The leukotoxic effect of specific serums does not parallel the agglutinative phenomenon, as seen in the red blood cells. In every instance we have ascertained the red cell grouping of the individuals by hanging drop preparations. The dried serum of the cover slip preparations also causes agglutination of the red blood cells in the instances in which the groupings are incompatible. It is striking to see complete clumping of the red cells, with the white blood cells in the clear interspaces as actively motile as in the control, in which the red cells are evenly distributed. Conversely, it is just as striking to find no effect on the distribution of the red cells in a vital film, and yet to observe all the white blood cells inactive and undergoing the disintegrative changes already described.

As an in vitro quantitative check on the apparent qualitative changes leading to disintegration of the white blood cells, already observed, susceptible blood cells were diluted with serum in a series of white cell counting pipets. Counts were made at successive intervals, contrasting with controls diluted only with acetic acid in the usual way. Table 1 indicates the quantitative differences that were found. It will be remembered that quantitative changes in vivo had been observed and recorded in the earlier transfusion reactions.

In one instance, an original total white blood cell count of about 7,000 had decreased 20 per cent the first hour and a quarter, approximately 50 per cent after three hours, and 80 per cent after twenty-four hours. In another case with 6,000 total white blood cells originally, after four hours 20 per cent, after five and one-half hours 42 per cent, and after twenty-four hours 60 per cent had disappeared. These observations were made at room temperature, and under conditions presumably not so favorable for the full toxic effect of plasma on transfused leukocytes as would avail within the body. The cells resisting disintegration longest were lymphocytes, although obviously affected qualitatively.

In order to determine whether we were dealing with a particular leukotoxic substance of definite concentration in the serums that seemed to produce these effects on foreign white cells, various dilutions of the concentrated serum were made, and a series of consecutive

of the Concentration of Incompatible Serums to the Extent of the Qualitative Cell Injury *

Serum T 3 vs. Cells T 2 Nov. 20, 1924—9:00						Serum T 4 vs Cells T 6 Nov. 24, 1924—1:10						Serum T 1 vs. Cells T 17 Dec. 11, 1924—10:30				
Control	100% Serum	50% Serum	25% Serum	10% Serum	5% Serum	Control	100% Serum	50% Serum	25% Serum	10% Serum	5% Serum	Control	100% Serum	50% Serum	10% Serum	100% Sodium Citrate Plasma
80	14	14	44	52	55	78	37	25	23	33	38	58	58	60	52	56
0	56	53	35	25	24	0	13	2	12	1	0	0	0	0	0	0
0	0	0	0	0	0	0	24	46	35	33	29	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0	13	15	0	0	5	2	0	1	0	0	1	0	0	0	0	0
0	0	0	1	0	0	1	0	1	5	3	3	6	0	0	2	0
1	1	1	1	2	2	5	9	2	8	6	11	8	8	8	10	9
7	2	5	6	5	1	0	0	0	0	0	0	0	0	0	0	0
88	86	88	87	84	87	86	83	77	78	75	74	72	66	68	64	65
3	6	9	6	11	8	5	10	13	13	13	5	16	24	20	28	21
5	3	2	2	3	2	5	5	6	5	7	3	8	6	10	8	10
2	1	1	0	0	0	0	1	0	1	1	2	2	2	2	0	1
6	0	0	0	3	3	6	0	0	0	2	5	10	9	13	12	12
10	10	12	8	14	10	10	16	19	19	21	10	26	32	32	36	32
2	0	0	0	1	1	4	0	0	0	0	2	2	2	0	0	2
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
0	4	0	5	1	2	0	1	4	3	4	4	0	0	0	0	0
2	4	0	5	2	3	4	1	4	3	4	6	2	2	0	0	3

is no incompatibility, shows no inherent anticoagulant effect. The large percentage of vacuolated, disintegrating polymorphonuclear neutrophils in preparations, the control and the undiluted serum or plasma, dependent on whether the transfusion is to be direct or indirect.

drops of blood was taken at the same time and exposed, first, to the undiluted, dried serum, and then to the same serum at 75, 50, 25 and 10 per cent of the original strength. Table 2 indicates that the leukotoxic effect is directly proportional to the concentration of the foreign serum, but that anticoagulants increase the degree of injury to already susceptible cells. This probably means that greater importance will attach to the state of compatibility of the serum of the recipient than to that of the donor, just as group IV in the red cell classification (Moss) is used as a universal donor, even though the serum contains agglutinins against the other cell groups.

This leukotoxic property of certain bloods is thermolabile. Heating for one hour at 60 C. in a water bath inactivates the plasma approximately 90 per cent, in comparing with the control and contrasting with the fresh, unheated serum.

We have now kept serum dried on cover slips for one year, and when contrasted in its effect with the fresh serum of the same individual, the former has been found to have lost about 90 per cent of its original effectiveness. The serum in sealed ampules deteriorates likewise. Thus, fresh serum is desirable and necessary in making tests for compatibility for transfusion.

Ross,[4] in 1911, discussed the relationship of the blood plasma to the length of life of the white blood cells in different individuals in both health and disease. He determined the length of life of a healthy person's leukocytes, when resting in their own plasma, to be between twenty-four and eighty-six hours. In the case of a healthy person's leukocytes versus another healthy person's plasma, the length of life was found to be between fourteen and twenty-eight hours. He concluded that "the plasma of one person is poisonous to another person's leukocytes." The present observations, however, tend to differentiate and group individuals on the basis of whether their leukocytes are susceptible to foreign plasma or not.

Thus, the effort has been made to determine the classification of individuals with reference to the white blood cells on some such basis as is recognized for the red cells. This has not been so easy, however, as it was in the earlier grouping of the red blood cells. At the one extreme, in the present series of forty persons are to be found about 40 per cent whose serum or white blood cells seem to be mutually compatible with all others. At the other extreme are 5 per cent whose white blood cells seem to be susceptible to all serums, or to practically all serums to which they have been exposed. Between these two extremes there appears a variety of reactions which can be explained only on the hypothetic presence of at least three different leukotoxic components in the cells, with their complements in like number variously distributed in the serums. On this hypothesis there would be twenty-seven combinations biologically possible, as recognized by Guthrie and Huck for the red cells. However, the frequent occurrence of a larger number of these possibilities with the white blood cells than with the red cells is indicated by our observations. We have found examples of nine different combinations in the remaining 55 per cent of our forty subjects. However, to attempt to assign arbitrary group designations to each would tend at this time only to complicate and confuse rather than to simplify and clarify the application of the principle.

As a consequence of this larger number of possible combinations, occurring regularly, and because of the necessity of using fresh serums for determining the compatibility, it is not practical to determine the group of each donor and recipient. Rather, we would suggest the direct cross matching of the white cells and serum of donor and recipient after the red cell grouping has been determined. With professional donors, it would soon become evident whether they fell into the general group of universal donors (A) or into the universally leukotoxic class (Z). It would seem, on the basis of the observations to date, therefore, that direct cross matching of the white blood cells, immediately prior to transfusion, is desirable and advisable as a further aid in avoiding the possibility of an unpleasant or conceivably fatal reaction. It is well recognized now that, for safety, direct cross matching of the red blood cells is desirable, in addition to a knowledge of compatible groupings.

HUMAN BLOOD TRANSFUSIONS

Guthrie and Huck,[5] in a review of the subject of the reactions following transfusion in relation to their recent survey of the existence of more than four iso-agglutinin groups of red blood cells, remark:

> The really serious reactions, although more uncommon, are of much greater importance. Those which concern us chiefly at the moment are such as may reasonably be attributed to incompatibility, as reckoned by the standard of iso-agglutination. Before passing to this aspect of the question, however, we wish to call attention to another phase which is usually overlooked. Most of us have a tendency to view transfusion as a ready means of correcting a deficiency in red blood cells, and so regard the material, administered intravenously, merely as a suspension of red cells, habitually disregarding the other ingredients, or at least minimizing their importance. We rarely consider the fact that the patient receives plasma, leukocytes, and more or less damaged platelets, in addition to the needed red cells. Concerning the effect of the leukocytes, not much evidence is available, but it has been shown that the platelet fraction may possess some toxicity.

In the final analysis, the real proving of the in vitro evidence for white blood cell incompatibility lies in its application to the therapeutic procedure of blood transfusion, under as carefully controlled conditions as it is possible to secure. The ideal test is, of course, that in which repeated transfusions are given to the same recipient, the consecutive donors differing only in their white blood cell compatibility, the technic of procedure in the transfusion being the same in all instances.

During the past year we have followed the cases of transfusion in the Thorndike and Fourth Medical services of the Boston City Hospital with reference to the procedures outlined above. In three instances we had opportunity to give to the same recipients repeated transfusions over a period of weeks. In one case, each of two transfusions was given from donors with both red and white blood cell compatibility in in vitro tests, and without any reaction. We have considered, singly or collectively, a rise of 2 degrees in temperature, with chilling and subjective discomfort, and marked white blood cell fluctuations, as constituting a reaction. In two instances, two transfusions were given at ten day intervals, the first donors being in each case incompatible only as to the white blood cells from in vitro tests. Severe reactions followed, one proving almost fatal. The second donors in each instance were both compatible as to red and white blood cells, with neither recipient showing the slightest reaction. All transfusions in the cases just cited were indirect, with citrated blood, and were given personally or with every possible detail personally checked. In a small series of ten single, indirect transfusions, seven cases in which there was compatibility of both red and white blood cells with in vitro tests showed no reactions. In two instances in which there was incompatibility only in the white blood cells, according to the preliminary tests, reactions occurred. In one case in which the white cells showed complete compatibility between donor and recipient, we observed a severe reaction. This individual proved, eventually, to be of an atypical group II in the red blood cell grouping, and ten different donors were tried before finally one could be secured with whose red blood cells there was not agglutination in vitro. In this instance, it is an open question as to what the cause of the reaction may have been, though from tests both before and after transfusion, the white blood cells of both donor and recipient were entirely compatible.

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[4] Ross, H. C.: Induced Cell Reproduction and Cancer, 1911.

[5] Guthrie, C. G., and Huck, J. G.: On the Existence of More Than Four Iso Agglutinin Groups in Human Blood, Bull. Johns Hopkins Hosp. **34**: 37 (Feb.), 80 (March), 128 (April) 1923.

Minot and Isaacs[6] recently reported an interesting case from the Huntington Memorial Hospital, Boston. They arranged to transfuse 500 cc. of blood from a patient with chronic lymphatic leukemia into a recipient with lymphosarcoma. We were invited to follow the case with supravital studies. In vitro tests showed the white blood cells of donor and recipient to be entirely compatible. Both were of group IV (Moss) red blood cells. The donor had a white blood count of 89,000 just prior to transfusion, of which 95.6 per cent, or 85,200, were lymphocytes. The recipient had 6,400 white blood cells per cubic millimeter, only 992 of which were lymphocytes. Immediately following the direct transfusion of 500 cc. of blood, the recipient showed 8,800 white cells per cubic millimeter, with 3,740 lymphocytes; one hour later, 5,600 cells with 1,428 lymphocytes, and two hours and fifteen minutes after the transfusion, 6,200 cells, with 961 lymphocytes. Nor was there, at any time, evidence of any reaction. Furthermore, there was no evidence of cellular disintegration in the supravital studies made all that day. We have here a case in which there was a rapid elimination, from the peripheral blood, of lymphocytes, but without observable disintegration and without reaction, a striking contrast to the disintegrative phenomena which we have observed coincident with certain reactions.

There are too many different factors entering into each transfusion of blood to attribute to any one of them the full responsibility for unfortunate and sometimes dangerous reactions. Also, it is too difficult to control all the variables in technic and in chemical and cellular constituents of the individual donor's blood to assure a complete elimination of danger. But, as we learn to eliminate one by one the possible sources of error, particularly in application to those cases of dangerously weakened patients in which successful transfusion may mean life, but even a mild reaction death, the responsibility lies with the one who does not make use of every available safeguard.

The possible application of a recognition of this biologic incompatibility of the white cells in certain human bloods to the development of hypersensitiveness after repeated transfusions, to skin grafting and to other procedures is suggestive.

SUMMARY

1. There seems to be a definite incompatibility between the blood plasma of certain individuals and the white blood cells of others, as shown by simple in vitro tests.

2. A definite biologic classification of individuals according to white cell compatibility is difficult, because of the fact that at least twenty-seven different combinations are possible, many of them not infrequent. Approximately 40 per cent of the group of forty persons investigated may be considered universal donors (group A); 5 per cent seem to have cells susceptible to all, or nearly all, plasma (group Z); nine different combinations are represented in the remaining 55 per cent, to which no arbitrary group designation has been assigned at this time.

3. The added *precaution of ascertaining the relative* compatibility of plasma and white cells by direct matching, preliminary to transfusion, particularly in cases in which extreme weakness makes imperative a successful operation, is advisable.

Sixty-Sixth Street and Avenue A.

[6] Minot, G. R., and Isaacs, Raphael: Transmission of Lymphocytes: Their Rapid Disappearance from the Peripheral Circulation of Man, J. A. M. A. **84**: 1713-1715 (June 6) 1925.

PNEUMATIC RUPTURE OF THE SIGMOID

REPORT OF CASE

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The subject under consideration is that type of injury of the lower part of the large intestine which is caused by trauma resulting from the careless use of compressed air. The first complete review of this relatively rare injury was published by Andrews[1] in 1911, in which he reported a case with operation and recovery together with a collection of fifteen additional unpublished cases.

REPORT OF CASE

A man, aged 45, a machinist, admitted to the Jewish Hospital, Dec. 14, 1925, at 4 p. m., had been injured about two hours before. While standing at work with a compressed air hose, one of his fellow workers, as a practical joke, placed the nozzle of the air hose about an inch from his rectum. The patient had his clothes on and states that the nozzle, which was about one-fourth inch in diameter applying a pressure of about 125 pounds, was placed diagonally against the anus. He immediately became dizzy, staggered, and fell to the floor unconscious. When he became conscious, about twenty minutes later, he walked with assistance to a first aid station about a block away. During this walk he complained only of having a sensation of being blown up. He did not vomit or feel nauseated, but had difficulty in catching his breath. At the first aid station the physician applied hot compresses to the abdomen, but he obtained no relief and was then brought to the hospital. Examination in the receiving ward showed that the patient was somewhat cyanosed, and his respirations were slightly increased, being mostly of the thoracic type. The heart sounds were scarcely audible. The temperature was 94 F.; pulse, 76, and respirations, 28. The abdomen was enormously distended, it was tympanitic all over, and the skin was very tense. A rectal tube was inserted without any effect on the condition. The patient stated that he had not passed any flatus since the accident, nor had there been any discharge of blood from the rectum. There was no peristalsis audible. About 5:30 p. m. he began to complain of abdominal pain for the first time. The abdomen became more tense and the cyanosis deepened. As there was not the slightest improvement in his condition, operation was decided on and was begun at 7:30 p. m., five and one-half hours after the accident.

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[1] Andrews, E. W.: Surg. Gynec. Obst. **12**: 63 (Jan.) 1911.

When the peritoneal cavity was opened there was a rush of air with a whistling sound, and coincidently the abdominal tension entirely disappeared. The intestines were moderately injected, and there was a small amount of thick bloody fluid in the peritoneal cavity. The patient was placed in the Trendelenburg position and the pelvic portion of the bowel was exposed. Slightly above the junction of the sigmoid, with the rectum on the left side, there was an irregular perforation of the bowel with a diameter of about 25 mm., together with a laceration of the mesosigmoid about 2 inches (50 mm.) long. Through this opening fecal material was escaping into the peritoneal cavity. In addition to this, there were four longitudinal lacerations on the lower sigmoid and upper rectum involving the muscular coats of the bowel but not extending into the lumen. These lacerations, together with the perforation, were sutured with catgut and then reinforced with Pagenstecher-Lembert sutures. A jejunostomy was made as a prophylactic measure, and the abdomen closed with a rubber drainage tube in the pelvis. The patient was returned to bed and placed in the extreme Fowler position and given continuous hypodermoclysis of physiologic sodium chloride solution containing 1 drachm (4 cc.) of 0.5 per cent procaine to each thousand cubic centimeters of the solution. Morphine sulphate, one-sixth grain (11 mg.), was given by hypodermic injection every four hours, while the respirations remained above 20 per minute. Nothing was given by mouth until the second day, when he was allowed to have water freely and the hypodermoclysis was then stopped. The patient was given a semisoft diet on the fifth day, a soft diet on the ninth day, and a light diet on the thirteenth day. The enterostomy tube was out on the eighth day; the drainage tube was completely removed on the thirteenth day, and the patient was then allowed out of bed. Up to this time his temperature never rose above 101 F.; the pulse remained below 110 and the respirations below 30 a minute. Jan. 8, 1926, the patient developed some pain in the right testis, the temperature rose to 103, and the pulse increased to 115 a minute. A diagnosis was made of a right epididymitis secondary to a cystitis resulting from catheterization. The temperature was septic until January 17, when the patient's condition again became normal. January 20, he was about to be discharged from the hospital when he began to complain of pain in the upper abdomen and vomited. This continued without relief from gastric lavage, and the following day the temperature dropped to 97 F., the pulse increased to 112, and a diagnosis of acute intestinal obstruction was made and a second operation performed; this revealed the small intestine strangulated by three bands at the site of the wounds in the large intestine. These bands were ligated and divided, and the abdomen was closed without drainage. Convalescence following this operation was entirely normal, and the patient was discharged from the hospital in good condition, February 7, fifty-five days after admission.

DESTRUCTIVE FORCE OF COMPRESSED AIR

In analyzing the subject of pneumatic rupture of the bowel, we note that the majority of the cases were caused by the so-called practical joker, a man who plays pranks on his fellow workers with an air hose, and a few cases were caused accidentally by men cleaning their clothes with the air hose. It is evident that this practical joking must be common, especially with the ever increasing use of air under pressure in our modern industries for drills, riveters, cleaning of cars, machines and barrels, and probably many more trifling or minor accidents have occurred which are not reported. In all the cases cited the air had to pass through one or more layers of cloth to enter the anus, yet this obstruction did not seem to interfere with its serious effect. In several of Andrews' cases and in some of these of Bendixen and Blything,[2] as in our own, it will be noted that the compressed air nozzle was at least an inch or more from the body. Why is it, then, that we have such a destructive force in the application of compressed air? Andrews' explanation is more than convincing: First, from 100 to 125 pounds of air will form a solid column of air several inches in advance of the hose or nozzle which would almost act like a solid body, forcing open the sphincter muscles. Secondly, the anatomic arrangement of the perineum is such as to facilitate the concentration of the air pressure at the anal orifice. This anatomic condition is a peculiar formation of the pelvic floor, forming a funnel, whose apex is at the anus; the confined air, expanding in this funnel, will force the anus open without having the end of the pipe accurately adjusted to the anus. With the involuntary contractions of the levator and sphincter muscles, the space between the buttocks would be narrowed and the funnel deepened, thus confining the escaping air laterally and leading it the more quickly into the bowel. Thirdly, Andrews has shown by experimental work that it took only from 7 to 12½ pounds of pressure to rupture a piece of human intestine.

With the exception of one or two cases reported with bruises around the anus, the majority of cases revealed pathologic lesions intra-abdominally consisting of hemorrhage in the serosa, lacerations of the serosa and muscular coat with bulging of the mucous membrane, or complete rupture of the bowel through the serosa, muscular coat and mucous membrane as in our case. In nearly all cases the sigmoid was affected. The descending transverse or ascending colon, together with the small intestine and mesentery, may show signs of injury.

Pain was the first symptom complained of in the majority of cases, although in ours and a few other cases it did not come on until a few hours after the accident. The pain is severe and continuous in character. The face is usually sallow and somewhat cyanotic, the facial expression anxious and pinched. The abdomen is enormously distended, the skin very tense, the percussion note tympanitic, very little if any abdominal breathing caused by the pressure of the air against the diaphragm, and the patient may or may not be conscious. The temperature is usually normal or subnormal at the beginning, and later rises. The respirations are increased; the pulse rate increases somewhat, but its volume varies in the proportion to the amount of internal hemorrhage and degree of shock; nausea and vomiting are commonly present. Rectal hemorrhage is usually absent.

With the history of working around air under pressure, with the characteristic barrel shaped abdomen with its tense wall and tympanitic note, the thoracic breathing and the general symptoms of an abdominal injury, the diagnosis should not be overlooked.

Of the twenty-seven cases of which we were able to collect reports, sixteen reported by Andrews, seven by Bendixen and Blything, one by Buchbinder,[3] our own case, and two additional unpublished cases that occurred in industrial plants in Philadelphia, the mortality was 70.3 per cent. Twelve of these patients were not operated on, with a mortality of 75 per cent. The mortality of the patients operated on was about 47 per cent.

SUMMARY AND CONCLUSIONS

1. Warning should be posted in all industries using compressed air.

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[2] Bendixen, T. A., and Blything, J. D.: Surg. Gynec. Obst. 18:73 (Jan.) 1914.

[3] Buchbinder, J. R.: Pneumatic Rupture of the Intestine, J. A. M. A. 76:518 (Feb. 19) 1921.

2. A column of air under pressure rushing from a nozzle which does not touch the body may enter the bowel and cause fatal injury.

3. The diagnosis should easily be made from the physical findings.

4. The anus and rectum escape injury because of their outside support, the sigmoid being the viscus usually injured.

5. Prompt evacuation of the air by emergency puncture and early laparatomy offer the best chance of recovery.

Medical Arts Building—931 Roosevelt Boulevard.

SOME MISCONCEPTIONS REGARDING THE RELATION OF HEREDITY TO CANCER AND OTHER DISEASES

STUDIES IN THE INCIDENCE AND INHERITABILITY OF SPONTANEOUS CANCER IN MICE: TWENTY-THIRD REPORT *

MAUD SLYE
CHICAGO

A very serious handicap is met in the effort to make known the facts of heredity and to place these facts in their proper relation to other biologic data, for the purpose of establishing the exact value of heredity among the biologic influences, so that we may have a firm basis for further departure, and not be forced continually to replow the same ground. This is particularly true in attempting to establish the relation of heredity to disease.

This serious handicap consists in what may well be called fundamentalism in the scientific field; that is, preconceived ideas and prejudices, not based on scientific research, but instead on general impression, hearsay evidence and the like, handed on from one to another and thus established in general opinion.

Scientific terms, frequently misunderstood and misused by clinicians and research workers, form a strong background of entrenchment to prejudice and preconceived opinion. One of these terms is "eugenics," which has been used to mean anything from personal and social hygiene, and childbirth conditions, prenatal and postnatal, through to the real facts of heredity. These widely divergent usages of the word eugenics have led to a rather widespread confusion among terms as different in meaning as sanitary, congenital and hereditary.

Personal and social hygiene have much to do with good birth, and they do determine those conditions which are congenital. They can in no way determine hereditary characters. They may influence the extent to which hereditary characters can develop, just as conditions of wholly external origin, such as lack of food or lack of sunshine can determine after birth how far certain hereditary characters can develop.

A congenital disease is contracted in utero. Any disease that is hereditary is not so contracted, but instead is the result of characters derived from ancestral germ plasm, inherent in the ovum and in the sperm cell. By the right line of experimentation, hereditary diseases can be proved not to have been contracted in utero.

This word "congenital" is another of the much misused terms. I am quoting from remarks made at a scientific meeting in a paper whose object was the establishment of one of the "cancer germs" somewhat recently discovered. "The fact that cancer is hereditary has nothing to do with whether or not it is an infection, as we all know that syphilis is hereditary, and syphilis is a specific infection." Such confusion between "congenital" and "hereditary" is not infrequent, and it is destructive of any correct understanding of heredity and the bearing on the etiology of disease which any given type of true inheritance behavior may have.

Intra-uterine influences determine what shall be congenital. Such influences do not determine characters that are hereditary, as these, having been laid down in ancestral germ plasm, can be carried through many generations before their frank emergence. As I have stated in a previous paper,[1] such hereditary recessive characters as the tendency to albinism, the tendency to cancer, and the tendency to the dancing habit shown in the Japanese waltzing mouse, have repeatedly been held back in this laboratory for over twenty-five generations. Submerged beneath a dominant character, they are carried along through generation after generation by hybrid carriers wearing the dominant appearance, but they are always potential in the strain as long as hybrid carriers are bred with the dominant. When eventually two of these hybrid carriers are mated, the next generation will frankly show, in some of the offspring, this recessive character (albinism, cancer, the dancing habit, etc.) which has been submerged in hybrid carriers for any number of generations desired. Such behavior of any character takes it wholly outside the realm of the congenital and places it indisputably among the characters that are hereditary. This test of whether or not a character can be transmitted through generation after generation without its frank emergence should always be made in the study of the inheritability of any recessive character, in order to be certain that it is truly hereditary and not congenital.

STATISTICS

The question of the inheritability of disease types seems to be of interest both to the medical and to the lay mind. In view of this long continued and very general interest, it is striking how few adequate studies have been attempted in the question of the relation of heredity to any pathologic condition.

In the absence of such studies, it is equally striking how generally an "opinion" is held on the subject of heredity, when the question is raised in connection with any given type of disease. There seems also to be a strong desire to think that diseases have no hereditary basis, and a readiness to accept the opinion that any given disease is not hereditary without any adequate data whatever, whereas the most incontrovertible evidence that any disease is hereditary does not carry conviction to such minds.

For example, at the symposium on rickets held at the 1924 session of the American Medical Association, the unanimous pronouncement was made that rickets is not hereditary "in the true sense" (whatever that expression may mean), and an editorial accepting this pronouncement and rejoicing in it shortly followed in The Journal.

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* Read before the American Society for Cancer Research, Albany, N. Y., April 1, 1926.

* From the Cancer Laboratory of the Otho S. A. Sprague Memorial Institute and the University of Chicago.

[1] Slye, Maud: J. Cancer Research, April, 1926.

This pronouncement was not the outcome of adequate heredity studies of rickets, but of the *opinion* of the speakers at the symposium, based presumably on dearth of direct evidence of inheritability in the particular rickets subjects handled in their service.

This illustration is typical of the method commonly in vogue in handling questions of heredity in relation to disease. I desire strongly to reemphasize the misleading nature of such extempore "opinions" on the subject of heredity, since heredity is a most profoundly determining factor in the nature and behavior of any disease, and pronouncements on the subject should be based only on intensive heredity studies.

Thus, the most serious of the obstacles in establishing the facts and influence of heredity is the very general misconception of the nature of heredity itself, and of the type of test that is adequate to prove the inheritability or noninheritability of any disease. One of the fundamentalist views concerning heredity is that if we study the two parents we have canvassed the field. It is therefore a matter of surprise to those who hold this point of view, when two black parent mice have white offspring; or two brown-eyed human parents have blue-eyed children, or two human or mouse parents without cancer have cancerous offspring. To be consistent in these cases would be to decide that black hair is not inheritable and that brown eye-color is not inheritable, since it is on such a basis that such investigators decide that cancer is not hereditary. Positive conclusions regarding heredity are frequently based on information concerning the parents only. Not infrequently, scientific investigators announce the inheritability of a disease on so inconclusive a test as mating two individuals with the same disease and finding that the immediate offspring also have the disease.

Some better informed statisticians would take the record not only of the two parents but also of the four grandparents, and with entire conviction they base their conclusions concerning heredity on these data. But it is easily possible, in heredity, that there should appear in the third generation a character shown by neither parent nor any one of the four grandparents, as shown in the accompanying diagrams.

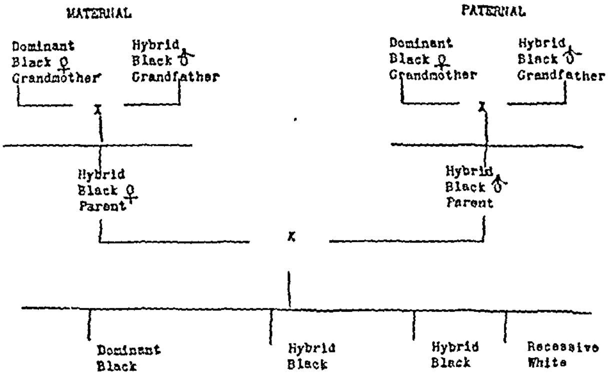

Fig. 1.—How albinos can be derived by the classic method, when neither parent nor any one of the four grandparents was albino.

As shown in figure 1, pigmentation is dominant over the lack of pigmentation (albinism). If, therefore, we mate two black mice, one of which is hybrid black (that is, carries albinism potentially) and the other purebreeding black, we shall get only black mice in their immediate offspring. One half of these will be purebreeding black, and one half will be hybrid black, and nothing in their external appearance indicates which are dominant black and which are hybrid black. If then we select for both parents of the next generation hybrid black individuals from such a cross, we shall get some albino mice in the immediate offspring.

Here, then, are albino mice readily obtained from ancestry which showed no white in either parent or any one of the four grandparents. By mating two of these whites, we shall immediately get a 100 per cent albino strain, which will remain 100 per cent albino, unless pigmentation is again hybridized in. Thus, by one *mating of two recessive albinos derived from hybrid* black is a strain, which had apparently been 100 per cent black, immediately converted in this branch into 100 per cent white.

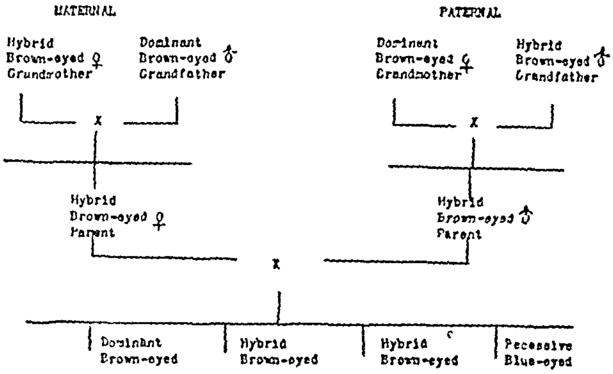
MATERNAL
Hybrid Brown-eyed ♀ Grandmother
Dominant Brown-eyed ♂ Grandfather
PATERNAL
Dominant Brown-eyed ♀ Grandmother
Hybrid Brown-eyed ♂ Grandfather
x
x
Hybrid Brown-eyed ♀ Parent
Hybrid Brown-eyed ♂ Parent
x
Dominant Brown-eyed
Hybrid Brown-eyed
Hybrid Brown-eyed
Recessive Blue-eyed

Fig. 2.—How blue-eyed individuals are readily obtained when neither parent, nor any one of the four grandparents, was blue-eyed.

As shown in figure 2, again, brown eye-color is dominant over blue eye-color. If we select as grandparents one purebreeding brown-eyed and one hybrid brown-eyed individual for each pair, one half of their immediate offspring in each case will be purebreeding brown-eyed, and one half will be hybrid brown-eyed individuals, and nothing in their external appearance will distinguish the dominant brown-eyed from the hybrid brown-eyed. If two of these hybrid brown-eyed individuals are selected as parents, some of their offspring will be blue-eyed. Indeed, it is possible and frequently occurs that the only offspring born of a hybrid brown-eyed pair (when there are but few children) are blue-eyed.

We have, then, blue-eyed individuals readily obtained when neither parent nor any one of the four grandparents had blue eyes. By mating two such recessive blue-eyed *individuals, we shall in one generation convert* into a 100 per cent blue-eyed family what had until this mating apparently been a 100 per cent brown-eyed family, since double recessive parentage gives 100 per cent extracted recessive young.

In exactly this way, since cancer susceptibility seems to be recessive to cancer resistance, it is possible to get in the third generation cancerous individuals in which neither parent nor any one of the four grandparents was cancerous, but in which each parent was hybrid noncancerous, while in each pair of grandparents one individual was purebreeding noncancerous, and one was hybrid noncancerous, as shown in figure 3.

Here, then, are cancerous individuals readily obtained, of which neither parent nor any one of the four grandparents had cancer. By mating two of these recessive cancerous *individuals, we shall in one generation convert* into a 100 per cent extracted cancer strain what until this mating had apparently been a 100 per cent noncancerous family.

In the same way, that is, by the continued mating of purebreeding black with hybrid black, it would be possible to prevent the appearance of white for twenty-five generations, or for fifty or as many generations as is desired. As long as one parent in each pair is purebreeding black, no white will occur in the offspring. As long as one of the parents in each pair is hybrid black, white will be carried potentially in the strain. This can be done for any number of generations desired. But when, in any generation, both of the parents selected are hybrid black, white offspring will appear.

In the same way blue eyes can be kept out of the family, but will remain in it potentially as long as purebreeding brown-eyed individuals are mated with hybrid brown-eyed. But when two hybrid brown-eyed individuals are mated, blue eyes will appear in their immediate offspring.

In exactly this way, I have found that as long as one parent is a pure-breeding cancer-resistant individual, no cancer will appear in the offspring. As long as one parent is a hybrid cancer-resistant individual, cancer susceptibility will inevitably be carried potentially in the family, through the hybrid cancer-resistant individuals, for any number of generations. When finally two hybrid cancer-resistant individuals are mated, some of their immediate offspring will be cancer susceptible. That is, in every character transmitted by heredity, cancer or any other character, whatever its nature may be, as long as a purebreeding dominant is mated with a hybrid carrier, the recessive character will not appear, but will certainly be transmitted through the hybrid carrier for any number of generations, while the mating is of this type. When eventually two hybrid carriers are mated, the recessive character will appear in some of the immediate offspring. In the chance matings of the human species, the mating of two hybrid carriers of any given recessive (like cancer) is almost certain to occur sooner or later. When it does, the recessive character appears in some of the children. This accounts for the sudden appearance of cancer sometimes in human families in which there has been no known cancer for two or more generations.

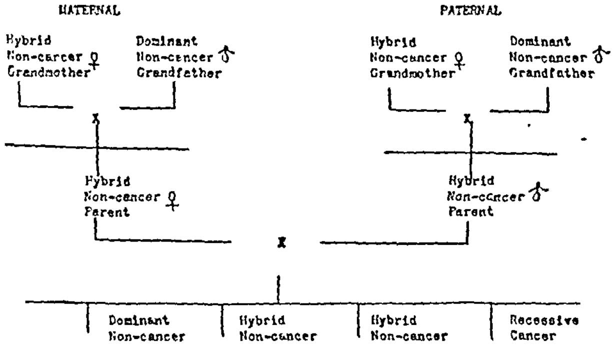
MATERNAL
PATERNAL
Hybrid Non-cancer ♀ Grandmother
Dominant Non-cancer ♂ Grandfather
Hybrid Non-cancer ♀ Grandmother
Dominant Non-cancer ♂ Grandfather
x
x
Hybrid Non-cancer ♀ Parent
Hybrid Non-cancer ♂ Parent
x
Dominant Non-cancer
Hybrid Non-cancer
Hybrid Non-cancer
Recessive Cancer

Fig. 3.—How cancerous individuals can be obtained by the classic method, when neither parent nor any one of the four grandparents had cancer.

When these facts of heredity are grasped, there is at once apparent the absurdity of attempting to settle the question of the inheritability of any character whatever by the statistical method. For while the statistician, endeavoring to settle the question of the inheritability of any disease, can perhaps get the death facts and the life facts of both parents and possibly of the four grandparents, and perhaps eventually even of all the great grandparents, he cannot discover which of these individuals are purebreeding resistant to cancer (or any other disease), and which are hybrid cancer-resistant, for there is no way to discover this fact except by the experimental method of selective breeding and analysis with the right number and the right kind of hybrid crosses.

Only by the experimental analytic method can the question of the inheritability of any character whatever be settled definitely. Prevailing monogamy in any species makes analyses very difficult.

EXPERIMENTALLY PRODUCED CANCER

In discussing the bearing of studies in experimentally produced cancer on the question of cancer heredity, let us briefly review the history of the fundamentalist reception of the demonstrated fact of the inheritability of cancer, and the facts of the experimental production of cancer.

When these studies in spontaneous animal cancer were first published in 1911, practically all other studies in animal cancer were being carried on with grafted tumors. It had been demonstrated [2] that the inheritance behavior of grafted tumors indicated multiple factors, paramount among which was a dominant, determining a successful "take" of grafted cancer in the first hybrid generation.

The fact that studies in this laboratory demonstrated the inheritance behavior of spontaneous cancer to be that of a simple mendelian recessive caused the fundamentalists to think that geneticists did not agree as to the behavior of cancer heredity. They therefore discarded the entire fact of the inheritability of cancer. As I have stated in a previous article,[3] the findings in these two lines of studies are in perfect harmony, since a "take" of grafted tumor depends on the normal regeneration of the host tissues, and a spontaneous cancer depends on the abnormal regeneration of the tissues. Both studies, then, demonstrate the dominance of normal regeneration over abnormal regeneration. And there is therefore not even disharmony in regard to the method of the inheritability of cancer for the fundamentalist to base his objections on.

Next in history come the so-called "spiroptera cancers" of Fibiger's work,[4] which were immediately taken by the fundamentalist as a proof that cancer could be experimentally produced in all subjects, and therefore was not inheritable, entirely disregarding the demonstrated inheritance behavior of cancer in every test made by every student of the subject. Fibiger's work, carried outside the inbred strain of rats in his own laboratory to wild Norway rats, other strains of laboratory rats and strains of mice, showed that spiroptera cancer was not produced in all subjects.

The results of his studies are thus in perfect harmony with heredity studies in grafted cancer and in spontaneous cancer; that is, spiroptera cancers were produced only in susceptible members of susceptible strains of susceptible races. The finished results of Fibiger's study of spiroptera cancer therefore left no ground for scientific opposition to the fact of the inheritability of cancer.

Bullock and Curtis' studies [5] in liver sarcoma in rats, following experimental feeding with tapeworm larvae, fall into the same class with Fibiger's results; that is, they also demonstrate dependence on hereditary predisposition for success in the experimental production of these tumors.

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[2] Tyzzer, E. E.: J. Med. Research **16**: 519, 1909; J. Cancer Research **1**: 125 (April) 1916. Little, S. W.: J. Cancer Research **6**: 106, 1921.

[3] Slye, Maud: J. Cancer Research **8**: 240 (July) 1924.

[4] Fibiger: Det. Klg. Danske. selskab. Biol. Med. **1**: 11, 1918.

[5] Bullock, F. D., and Curtis, M. R.: J. Cancer Research **8**: 1 (April) 1924.

Next followed the tar cancers, first produced by Yamagiwa in rabbits, and now widely studied in rats and mice by perhaps the majority of the present day workers in animal cancer research.

It is too early as yet to say what the final residuum will be from the study of tar cancers, since so many of these studies are still under way. But whether or not it is eventually found that tar cancer can be produced in all subjects, the conclusion cannot decide the question of the inheritability of cancer, and must be in agreement with all other facts of cancer, one of which is its demonstrated inheritability.

No one can deny the inheritability of the tendency to grow hair, yet continued painting with sufficiently strong coal tar products destroys the hair-growing mechanism. In all probability, continued painting with sufficiently strong coal tar will destroy every inherited tissue and every inherited function of the body. That is, no tissue, no function and no tendency of the body is immune from destruction. Coal tar products of sufficient concentration are very destructive agents and undoubtedly can destroy the cancer-resisting mechanism.

Thus the method used in the experimental production of unions may be destroying the very tendency it attempts to test. Therefore, the question of the inheritability of cancer resistance cannot be settled by determining whether cancer can or cannot be experimentally produced by any given method in any given set of subjects, since there is not and cannot be any complete biologic control in the field of heredity in such studies, nor any certainty that it is only the inheritability of the tendency to cancer resistance which is being tested in such experimentation.

PUBLIC PROPAGANDA

Another type of obstacle in establishing the facts of cancer heredity is the extraordinary idea apparently prevailing in some minds that since human heredity cannot at present be controlled, because we cannot control and experiment with human matings, the demonstrated facts of heredity do not apply to the human species and may therefore be categorically dismissed. For example, note the statement recently made by Wood of the Columbia Institute of Cancer Research:[6]

> Of course, the animal experimentation done by Maud Slye in Chicago and by Bullock and Curtis in my laboratory have definitely proved that in animals a susceptibility to cancer is transmissible. Of that there can be no question. The breeding experiments, however, are so complicated and take so long that if they were applied to human beings it would mean that for the last 5,000 years both parents of these unfortunate human beings would have had to have cancer. That is a concentration of breeding which cannot occur in the human race. So the facts of the high incidence of cancer in their experimental studies cannot be applied in full value to human beings.

This idea, that to test the inheritability of cancer in man would take 5,000 years, with double cancerous parentage in each generation, has no scientific basis whatever. The second argument is equally untenable, for Wood says in effect that the fact that we cannot make a 5,000 year test of the inheritability of human cancer warrants us in discarding the facts of cancer heredity so far as man is concerned.

An answer[7] to this statement appeared in THE JOURNAL, part of which is repeated here.

> The 100 per cent cancer strains that have been produced in any laboratory have been produced from a double cancerous parentage somewhere in the line. But this does not mean that there must have been a series of double cancerous parentage for any length of time corresponding to anything like 5,000 years of human heredity, or even for more than one generation. *One generation of double cancerous parentage will produce 100 per cent cancer susceptible offspring,* exactly as double albino parentage for only one generation will produce 100 per cent albino offspring.
>
> The long series of many generations of 100 per cent cancer have been charted, not because countless generations were necessary to produce them, but to demonstrate that they actually were 100 per cent cancer strains and continued so for as many generations as we continued a double cancerous parentage. It is not alone these strains of double cancerous parentage which prove the inheritability of cancer, but still more potent in this proof is the behavior of cancer in hybridization.
>
> Only two generations of exact facts are necessary to demonstrate inheritance behavior where the cross is between a cancerous individual and a noncancerous individual who is not a cancer carrier. Three generations of exact facts—not of double cancerous parentage—are necessary to determine how cancer behaves in heredity when a hybrid carrier is mated with a cancerous individual, or with a noncancerous individual that is not a cancer carrier. This is true in mice, in man or in any other animal, or in any plant.
>
> The difficulty in studying human heredity is not that we cannot have double cancerous parentage, or any other type of double parentage for 5,000 years, but that we cannot get the exact facts for even one generation. It is because of this lack of exact facts and because we cannot experiment on human beings in this and many other lines that we must get our exact facts from animal experimentation.
>
> That we are justified in applying these facts, where they are basic biologic facts, is one of the best assets derived from the discovery of the fact of evolution.

I bring up the quotation from Wood again at this time because it represents the type of reasoning that has governed the pronouncements on the subject of cancer heredity, in the publications of the American Society for Cancer Control. These publications in their turn have annually governed the propaganda concerning cancer heredity, in the various cancer control meetings all over the United States, and they are, moreover, quoted abroad. Thus easily does the fundamentalist doctrine spread.

In no other field of scientific endeavor do we assume that, because at present we cannot make a particular test of a demonstrated scientific fact (such as controlling human matings), therefore it is not a fact and we can forthwith discard it, nor do we discard the conclusions of higher mathematics and of higher physics because they are complicated.

The great difficulty in the study of human heredity is that man is so long lived an animal that no one person can collect accurate data for three generations. But this does not mean that there are no heredity facts unbrokenly expressing themselves in the human species just as they do in other animals of a shorter life span, whose exact records are being taken. If we should establish permanent records of periodic examinations of each living individual and permanent recorded accurate necropsy findings of all dead, in three generations we should have valuable scientific data. These data would undoubtedly include matings of double cancerous parentage, matings of double noncancerous parentage, matings of noncancer with hybrid carrier, and matings of cancer with hybrid carrier. These are exactly the matings by which we test the inheritability of cancer in short lived animals, and such records, if accurately taken and correctly interpreted would furnish an equally exact test for the human species.

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[6] Wood, F. C., in discussion on cancer, J. A. M. A. 85:1050 (Oct. 3) 1925.

[7] Slye, Maud: Cancer Heredity, J. A. M. A. 85:1242 (Oct. 17) 1925.

STRAINS SUPPOSED TO CARRY A FIXED CANCER PERCENTAGE

Another strong obstacle in the way of establishing a clear comprehension of the relation of heredity to cancer is the announcement by workers in heredity, and by other workers in medical research, of what they designate as strains of animals carrying a permanently fixed percentage of any given character, as, for example, cancer.

The literature has several instances of the announcement of strains carrying a fixed percentage of cancer, to which it is perhaps unnecessary to make reference here, except when the assumption of a fixed percentage of cancer within a strain has been taken as the single basis for further research, as in the recent work of Lynch[8] of the Rockefeller Institute and of Bagg[9] of Cornell Medical College.

The widespread use of tar cancers in current research and the marked success in obtaining high percentages of such proliferations have again strengthened in the fundamentalist mind the idea that cancer is not inheritable, irrespective of the fact of its demonstrated inheritability. This idea has urged on workers in cancer heredity the necessity of demonstrating the relation of tar cancer to cancer inheritance, and Lynch of the Rockefeller Institute has attempted to do this, using materials that were entirely unfitted for the problem involved.

Lynch used two strains of mice, one of which she designates as carrying a fixed high percentage of spontaneous mammary gland cancer, 65 per cent in bred females and 20 per cent in unbred females; and the other, as carrying a fixed low percentage of spontaneous mammary gland cancer, 28 per cent in bred females, and 4 per cent in unbred females. Her object was to determine whether or not painting with tar the skin of mice from these two strains would change the incidence of cancer within the strains, and whether the so-called high per cent cancer strain would show a greater increase in cancers than the so-called low per cent cancer strain.

As Lynch herself very aptly states, "To test the influence of heredity on the response of the skin to tar painting, it would be best to employ strains of animals exhibiting differences in the incidence of spontaneous cancer of the skin."

Not only would it be best in such a test to use as a basis of experimentation susceptibility to skin carcinoma, but it is futile to use anything else, since the tendency to other types and locations of neoplasms, such as mammary gland carcinoma, has no influence on the production of spontaneous skin cancer. Lynch's experiments, therefore, have no bearing on the problem attacked. Moreover, having designated her strains as 20 per cent and 4 per cent, respectively, of spontaneous mammary gland carcinoma in unbred females (thereby carefully distinguishing between the cancer rate in bred and in unbred females), she proceeds to use in the experiment, as she says, "approximately one-half males" *whose susceptibility to cancer of any kind has in no way been expressed.* She does not state the age of the mice used, although the average age for the appearance of skin carcinoma differs markedly from the average age for the appearance of mammary gland carcinoma, and the matter of age differences should be under careful control in such an experiment.

But the gravest objection to experiments of this kind is the assumption of fixed percentages of cancer within a strain that is not homozygous in regard to cancer. It is wholly unscientific to assume fixed percentages of any character within such a strain on the basis that, to date by the matings made, it has yielded such a percentage of the given character. The past history of cancer production within a heterozygous strain cannot scientifically be assumed as the certain future history of cancer within that strain, nor can it be taken as the criterion for the cancer behavior of any individual member of the strain, not subjected to analysis.

Every strain that is producing some cancerous and some noncancerous individuals is heterozygous to cancer, just as every strain that is producing some black and some white individuals is heterozygous to albinism. *Every noncancerous member of a heterozygous cancer* strain is heterozygous to cancer unless at least one parent of that individual was dominant noncancerous, and one half of those with one dominant noncancerous parent will be heterozygous to cancer, since the mating of a dominant with a hybrid carrier produces one-half dominant and one-half hybrid carrier. Any strain that has to date yielded 4, 20, 28 or 65 per cent of cancer, like Lynch's strains, is heterozygous to cancer, and the cancer potentiality of every one of its members is dependent wholly on what matings have been made, just as its future cancer percentage will depend on what matings may be made. In addition to its cancerous members, such a strain is made up of some dominant noncancerous members and some hybrid carriers, and nothing in the external appearance will distinguish between the latter two types.

As I have already pointed out in this paper, recessive characters, such as the tendencies to albinism, to blue eyes and to cancer, which are submerged in hybrid carriers wearing the dominant appearance, can be made to appear suddenly within a strain, by the mating of two hybrid carriers. It is thus shown to be possible to convert, by two matings, a strain heretofore always wearing 100 per cent of the dominant appearance into a strain expressing 100 per cent of the recessive.

We cannot scientifically say that any heterozygous strain inherently carries a fixed percentage of cancer. We can only say that during the life of the strain, it did, under the matings made and the handling given it, produce a certain percentage of cancer. We must at the same time admit that, with different types of matings and different handling, the same strains would have produced wholly different percentages of cancer. The very foundation, therefore, on which Lynch's entire experiment is based vanishes away. The problem can never be scientifically attacked by this method.

The work of Bagg of Cornell Medical College, reported at the 1925 meeting of the American Society for Cancer Research, is open to a similar basic criticism. Bagg's experiments were designed to test the relation between functional disturbances of the breast to the incidence of mammary carcinoma in mice. He says that "a carefully inbred strain of animals with a well known low rate of tumor incidence was selected." He does not state what this low rate was. The control group of mice showed an incidence of 5 per cent of breast carcinoma. These mice, he says, "were breeding normally; that is, the females were remated only after nursing their litters for about six weeks." Of course this method is in miniature the method of human breeding and it does not necessarily define normal breeding in mice. The group of fifteen mice subjected to various types of experimental dysfunction of the breast showed an incidence of 85 per cent of breast carcinoma.

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[8] Lynch, Clara J.: J. Exper. Med. **42**: 829 (Dec.) 1925.
[9] Bagg: J. Cancer Research **9**: 498, 1925.

I do not find any suggestion by Bagg that his results had any bearing whatever on the question of the inheritability of cancer, or that they were intended to have such a bearing. The fact of the inheritability of cancer, however, has a marked bearing on his experiments. It must be that he recognized the necessity of taking advantage of cancer susceptibility, since he very wisely selected a strain that was yielding carcinoma of the breast. Had he sought results opposed to the fact of cancer heredity, he should have made his tests on a strain that was analyzed cancer free, and should have secured complete biologic control in every other element of his experiment.

His experiments, then, were apparently designed to test the relation of experimentally produced breast trauma to breast carcinoma, in strains predisposed to breast cancer. In this selected strain, predisposed by heredity to breast carcinoma, he found a greatly higher incidence of breast cancer in the individuals that he had selected for experimental breast trauma.

There are two pertinent suggestions to be made here:

1. As I pointed out in my discussion of Lynch's work with tar cancers, it is unscientific to assume a fixed percentage of cancer in strains heterozygous to cancer. The fact that a strain, under the matings made, has yielded a given percentage of cancer, for example, as in Bagg's control group 5 per cent, cannot be taken as the criterion for the future production of tumor in that strain, or the percentage of tumor production in any other group of any other individuals in that strain, unless every individual involved has been analyzed and his cancer potentiality has been definitely established.

Bagg's conclusion, therefore, that the 85 per cent breast cancer incidence in his experimental group was due wholly to experimental procedures lacks the same scientific basis lacking in Lynch's work. It is easily possible in a strain which to date has never yielded more than 5 per cent of breast cancer to secure suddenly 100 per cent of breast cancer by the right selective matings, or 85 per cent. It is not impossible that the fifteen mice selected for his experimental group were exactly the ones which under any handling would have produced breast cancer; and such a possibility should be ruled out by complete biologic control.

Any strain which to date has produced 5 per cent or 85 per cent of cancer, like Bagg's strains, is heterozygous to cancer, and no assumptions are warranted as to the cancer potentiality of any unanalyzed groups or individual members of the strain. Moreover, in all such experiments, these should be recognized the source of error, even in individuals examined at necropsy, of deaths from intercurrent disease that prevents cancer development.

I have for years been urging on research workers the necessity of using biologically analyzed stock for their experiments, instead of assuming that results secured on unanalyzed stocks are wholly due to experimental procedures.

2. So far as I know, there is no worker in cancer research today who does not recognize the necessity of stimulations, irritations or traumas, either minute or gross, as a basis for cancerous growth. The fact that various types of irritations play an important part in the causation of cancer in susceptible individuals is one of the best basic arguments for defining cancer as an abnormal regenerative process. This regeneration after trauma apparently is abnormal in these cancer susceptible subjects, because of the lack of a differentiating mechanism in the tissues. It seems to be this local lack of a differentiating mechanism in susceptible tissues that is the hereditary element in cancer susceptibility. That is, the type of local response made to a given type of irritation is determined by heredity, whatever the type of that irritation may be.

If Bagg had worked with individuals every one of which was analyzed as to its cancer potentiality, if he had selected groups exactly homologous in the matter of cancer potentiality, individual for individual, and with such groups of homologous individuals and with numbers large enough to make a test had obtained just such results as he did obtain in his experiment, he would have given us a scientific demonstration of the relation of these particular types of trauma to breast cancer causation in his tested strains. Such conditions would have constituted a complete biologic control for those particular groups of animals.

It is very easy to assume after any particular experimental procedures that the end-results are wholly caused by such procedures; but if animals are used which have not been analyzed in the potentiality being tested, there is no basis for such an assumption.

In this connection, it might be of interest to mention mouse 21663 of this stock. She was picked up when 2 weeks old, with two carcinomas of the mammary gland, 10 and 3 mm., respectively, in diameter. She lived one week more, and at necropsy and on histologic examination, proved to have two carcinomas of the mammary gland, bilateral kidney sarcomas (the left kidney almost entirely destroyed), and osteosarcomas of the fifth rib and of the spinal column. Needless to say, this mouse had not been mated, nor had her ovaries been experimented on by removal or otherwise. But she was the great granddaughter of female 12058 with sarcoma of the kidney, bilateral sarcoma of the uterus and bilateral sarcomas of the ovaries. She was the granddaughter, five generations removed, of female 26 with sarcomas of the kidney, ovary, liver and mesentery. She was the granddaughter, eight generations removed, of female 3 with a sarcoma-carcinoma of the mammary gland, a malignant adenoma of the liver and sarcoma metastases in the kidney, in a strain which was being deliberately bred for kidney and liver tumors, and in her ancestry there was considerable percentage of osteosarcomas. It is also of interest to note that exactly the types of so-called functional disturbance used in Bagg's tests in his groups 1 and 2, that is, early and constant breeding of young females with removal of the young immediately after birth, have in this laboratory never occasioned mammary gland carcinoma in analyzed individuals of analyzed cancer free strains.

Although Bagg himself did not assert that his results had any bearing on the fact of the inheritability of cancer, in the discussion of his paper Ewing[10] of Cornell Medical College took occasion to say: "Carcinoma has been developed in a strain of animals which had very little natural tendency to develop the disease. If there had been any congenital or hereditary characters in the development of these carcinomas, it does not appear in these experiments of Bagg's. He has watched this group of animals for thirteen years and has found a very low incidence of cancer, so I think that these experiments offer a somewhat difficult problem to those who believe in the congenital or hereditary incidence of cancer."

So far as I know, no research worker who has made any study of the incidence of cancer defines it as a congenital disease, so we may dismiss that portion of Ewing's remarks. Moreover, the inheritability of cancer is no longer a matter of belief, but it is a matter of exact demonstration.

Evidently, Ewing did not see the paradox in his first two sentences. For in the first he admits the strain used had a little natural tendency to carcinoma of the breast; while in the second, he says that no hereditary character in the development of the disease appeared in the experiment.

As I have stated, a strain which to date has been producing 5 per cent breast cancer can in one mating be changed to a wholly different percentage of breast cancer, and any experimental procedure which assumes the continuation of a fixed percentage of cancer in unanalyzed strains is based on assumption only.

Loeb[11] also, in attempting to demonstrate the relation of the ovaries to breast cancer incidence, used what he called "a strain of mice with a known high tumor incidence," and concluded from his experimental procedures that removal of the ovaries lowered the incidence of tumor within the strain.

As I have repeatedly stated since the first publication of this work fifteen years ago, the type of product within a strain depends on the matings within that strain, just as certainly as the type of chemical result depends on what chemical combinations are made. If we combine zinc with sulphuric acid we shall get one kind of result; if we combine it with hydrochloric acid we shall get a different result. In just this way and just as surely, if we mate an albino with a red mouse, we shall get one type of offspring; if we mate the same albino with a gray mouse, we shall get a different type of offspring. If we mate the same gray mouse with a first generation albino derived from red (and hence a hybrid carrier of red), we shall get entirely different results; that is, some red, in the first hybrid generation.

Any strain can in one mating be changed in the percentage it carries of any inheritable character, including cancer, according to the mating made. The greatest caution, therefore, will be necessary to secure complete biologic control, in any effort to discover the relation which experimental procedures of any kind may bear to the causation of cancers of any type or any location, or the relation of the basic facts of cancer heredity to such results. The assumption that fixed percentages of cancer can permanently define a heterozygous strain, or any group or any individual members of such a strain, will certainly have to be excluded.

We shall never get the right idea of heredity, and hence we shall never work out correctly the facts of inheritance and its complex and intricate influences throughout all organic response to every type of test, until we conceive of strains as plastic in every generation, susceptible of being changed by one mating of the right kind from 100 per cent of a character to zero per cent of that character, or to 50 per cent, and susceptible of being changed by a series of matings to any percentage desired. If this were not true, and if strains were fixed in the percentage they carried of any inheritable character, there would be no such thing as heredity, since the new hybrid mating would bring nothing to the strain; that is, the new individual would have no inheritance to offer.

ALL FACTS OF CANCER MUST BE CONSISTENT EACH WITH THE OTHERS

In the diverse lines of approach used by the many workers in any field of scientific research, there are sure to be made evident gaps in our knowledge. But these gaps do not entitle us to deny a scientifically demonstrated fact, because we cannot yet in our own minds make it accord with our own particular discovery or our own particular theory.

As in any other field of scientific endeavor, all the facts in the field of cancer research must be consistent each with every other. If it should eventually be possible to produce experimental cancer in every subject, this would not disprove the inheritability of cancer any more than the fact of the inheritability of cancer proves that it must be impossible to produce cancer experimentally in every subject. No biologist has ever made such an assertion. There must instead be a third fact that harmonizes these two. This third fact is already evident in the highly destructive nature of the experimental agents used, which may well destroy the cancer resistant mechanism or any other bodily mechanism. Spontaneous cancers do not arise in every individual, either in the human species or in lower animals even under identical conditions; this is a demonstration that there is a cancer resistant mechanism present in some members of every species. No amount of experimentally produced tumor can offset this fact. The explanation of these tumors will have to harmonize with it.

Again, if cancer should eventually be demonstrated to be a specific infection, this would not disprove its inheritability any more than the fact that the inheritability of cancer definitely proves that cancer is not a specific infection. There must be a third fact that would harmonize these two. That third fact is readily discerned even now in the hereditary basis of every organic response to every type of stimulation or irritation, whether it is a specific germ or anything else, although there is variation in the types of inheritance behavior, and apparently these variations have a bearing on the etiology of various diseases.

The third most frequent objection to the inheritability of cancer, namely, that although proved for lower mammals it does not apply to man, is answered by the fact of evolution. Similar tissues derived in the course of evolution from the same ancestry must respond in the same way as the ancestral tissues to the same types of stimulation. Only so could an unbroken series of organisms evolve each from the other.

The scientific method of procedure for those who cannot accept the evolutionary evidence is not categorically to deny what they cannot disprove and what has indisputably been found true by many workers, but rather to begin the measures which inevitably must produce scientific data for the investigation of heredity in man.

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[10] Ewing, James: J. Cancer Research 9: 500 (Dec.) 1925.
[11] Loeb, L.: J. Cancer Research 1: 1 (Jan.) 1916.

MEDICAL DIATHERMY IN KIDNEY DISEASES

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Medical diathermy, the heating within physiologic limits of bodily structures with high frequency currents, may be employed to advantage in glomerulonephritis and toxic nephrosis.

The efficiency of this therapeutic procedure depends on its judicious application according to the character of the case. Glomerulonephritis, whose essential feature is the more or less complete blockade of the glomeruli involved and the subsequent renal ischemia, is a condition in which the local administration of high frequency currents to the diseased kidney or kidneys may be beneficial. The heating causes the arteries, arterioles and capillaries within the area under the influence of the high frequency current to dilate, and is therefore apt to improve the impaired circulation. The clinical effect of this active hyperemia is readily observed. Following the diathermic treatment, the urinary output is raised; the content in the urine of liquid blood is promptly heightened, and the number of tiny coagula appearing in the urine is increased. In case a decapsulation of one or both kidneys is undertaken, the "sweating" of the denuded organs is enhanced by a subsequent diathermic treatment, as evidenced by the fact that the serum emanating from the point of drainage becomes copious and acquires a rosy hue.

The addition of diathermy to the standard antinephritic regimen seems to hasten the absorption of nephritic edemas. It is argued that diathermy is contraindicated in acute nephritis because it is apt to increase the renal bleeding and is also apt to raise the already high blood pressure, a symptom usually accompanying nephritis. Increased bleeding from a nephritic kidney may be looked on as therapeutically desirable, this forced flow being helpful in raising the exudative blockade within and around the glomeruli. The rise of blood pressure in nephritis may be considered a compensatory hyperactivity of the heart. A nephritic kidney offers increased resistance to the propulsion of the blood stream. In order to force the necessary amount of blood through it, an augmented heart action is essential for furnishing the proper renal blood supply. From either point of view, the objections mentioned cannot be upheld.

TECHNIC

The object being to heat the kidneys, they must be localized. This enables the operator to place the electrodes properly. While occasionally it may be feasible to locate the kidneys by palpation, the surest way of ascertaining their position is the taking of a roentgenogram. Incidentally, at times roentgen rays influence rather favorably the course of a nephritis by reducing the surplus of exudation that chokes the glomeruli. Electrodes of equal size, approximately of the dimensions of the kidneys, are placed opposite each other, one in front and one in back, including between them the organ to be heated. Blank metal electrodes are generally considered most satisfactory.

The dosage in diathermy for nephritis should be considered from two points of view. It is of course necessary to produce a certain amount of heat in order to answer the therapeutic purpose, but the influence of the heat on the heart must also be taken into account. In practically every instance of nephritis, the heart is involved to a greater or lesser extent. While it is true that moderate heating of the heart is beneficial in certain diseases of the heart, any excess of heating may lead to a rapidly developing fatigue of this organ. Therefore, if diathermy is applied to the left kidney, especially if it is high up in the diaphragmatic cupola, the amperage must be kept strictly within moderate limits. The same consideration also militates against a simultaneous diathermy of both kidneys, which may produce overheating of the thorax and subsequently of the heart.

Exceeding the safe limit is marked by restlessness of the patient, profuse perspiration and precordial anxiety. Prolonged sittings may lead to an undesirable accumulation of heat; therefore, it is advisable to restrict the initial treatments to about fifteen minutes. After the tolerance of the patient is established, the duration of each diathermic treatment may be extended if deemed necessary. There is no objection to the repetition of diathermic treatment every other day until the nephritic symptoms have receded. In nephrosis, direct heating of the kidney *a priori* does not hold out any promise of success, because in such cases vascular impediment is not a prominent feature; clinical experience bears out this theoretical reasoning. But diathermy may be used to advantage in a different manner of application. A charactertistic symptom of nephrosis is the retention of chlorides within certain structures of the body, among which the subcutaneous cellular tissue is prominent. These structures act as intermediary and under certain conditions as temporary depositories only for the metabolic end-products before they are carried by the blood stream to the kidneys for final disposal and elimination. This physiologic rôle of these structures is so pronounced that some authors call them the adventitious kidney. If for some reason the capillary complex of this system is depressed in its function, an excessive accumulation of chlorides will result which, finally leads to the establishment of edema. Capillaries and arterioles as a rule respond quickly to medical diathermy. Results may be expected in many cases, if the temperature of the whole body is moderately raised by the use of general diathermy, the so-called autocondensation. In addition the lower extremities, so prone toward development of edema, are separately heated at intervals by the high frequency current. If edema of the lower extremities already prevails, however, the amperage is kept within low limits, because an edematous skin is vulnerable.

The question concerning the amperage to be employed in each case cannot be answered *a priori* by quoting exact figures. Each diathermic apparatus is a unit by itself, and the resistance to the electric current offered by the body of the patient depends also on individual factors, among which the thickness of the layers covering the organ to be heated plays a prominent rôle. The safe procedure is to start with the minimum of current and gradually increase its volume until the patient reports a distinctive sensation of warmth but not of heat. After the tolerance of the patient is established, the readings of the amperemeter may be used in the following treatments.

CONCLUSION

There is no mysterious electrical influence brought to bear on the renal cells by diathermy; whatever benefits are obtained are due to the heat produced within the perirenal and the renal structures by the resistance these parts offer to the high frequency current forced through them. The efficiency of any antinephritic treatment depends to a great extent on its early administration, and the same holds good for diathermy. The sooner after the discovery of a nephritis it is applied, the more favorable will be the outlook. Medical diathermy is by no means a cureall or a specific for nephritis or nephrosis. It is simply a valuable aid and will furnish results only in combination with the other therapeutic measures indicated, such as removal of the etiologic infectious foci, the proper dietary regimen, the administration of cardiacs and diuretics and, if suggested by the prevailing conditions, nephrolysis and decapsulation.

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SYMMETRICAL GANGRENE OF MALARIAL ORIGIN [*]

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The occurrence of gangrene following infectious diseases is not uncommon; but the occurrence of symmetrical gangrene as a complication in such conditions is comparatively rare and is barely mentioned in any of the textbooks. The occurrence of symmetrical gangrene in malaria, which is classified by Dieulafoy [1] under the infectious diseases proper to man, is mentioned by only a few authors; of all the complications and sequelae of malaria, gangrene is probably the rarest.

Brusa [2] reports a case of symmetrical gangrene in a child, aged 14 months, following measles; Learmonth,[3] a case of gangrene in the lower extremities in a child, aged 3 years, complicating scarlet fever which began simultaneously in the two limbs. Buerger [4] refers to gangrene as complicating syphilis, typhoid, influenza, typhus fever, cholera and scarlet fever during the period of convalescence; Darier [5] and Kerr [6] refer to thrombosis following typhoid, the former mentioning gangrene of the leg as a terminal result. Ransome and Corner,[7] after a diligent search in the libraries of the Royal Society of Medicine and of the Royal College of Surgeons of England in 1910, collected reports of eight cases of gangrene following convalescence from diphtheria, and added one additional case of their own. In seven of the nine, the leg was affected. Bailly,[8] in 1920, in an article on the occlusion of the arteries of the limbs in malignant diphtheria, collected reports of seventeen cases of gangrene from the literature and added one of his own. All were of the dry type. In two, the gangrene involved the upper limbs; in sixteen, the lower. In five cases, both lower limbs were involved. Barraud,[9] in 1904, made a summary of 103 cases of gangrene of the extremities following the infectious diseases in young patients. He chose young subjects for his study in order to exclude senile and presenile gangrene due to arteriosclerosis in older persons; he also excluded spontaneous gangrene resulting from Raynaud's disease. Of the cases recorded in the summary of 103, typhoid fever is given as the cause of gangrene in forty-four, typhus fever in eleven, measles in six, scarlet fever in five, pneumonia in five, acute articular rheumatism in five, influenza in two, diphtheria in two, erysipelas in two, malaria in two, pertussis, dysentery, relapsing fever, cholera morbus, varicella in one each, and various surgical conditions in fourteen.

Malaria is mentioned as a causative factor in symmetrical gangrene by Dana,[10] Castellani and Chalmers,[11] DaCosta,[12] Elliot,[13] Stelwagon,[14] and Church and Peterson [15] In 1869, eleven years before the discovery of the pathogenic agent of malaria by Laveran, Rey [16] published a report of the first case of symmetrical gangrene observed in a man who had had intermittent fever in Senegal and had suffered a relapse on his arrival in France Laveran [17] described one instance of gangrene of both legs as a complication of malaria. In 1875, Mourson [16] noticed a local asphyxia following an attack of intermittent fever and called especial attention to the coincidence. Fischer [16] also had seen a case of the same kind, and Calmette,[18] in 1877, devoted an article to reports of local asphyxia of the extremities in connection with malarial intermittent fever. Leloir [19] observed three cases which seemed to strengthen this conclusion.

Osler,[20] in 1900, reported a case of multiple gangrene occurring in estivo-autumnal malaria and involving the feet, hands, buttock and occiput. Examination of the blood revealed crescents and estivo-autumnal organisms in unusually large numbers.

Hammond,[21] in 1913, reported from India two cases of gangrene of the extremities—one with recovery, the other fatal. In the case ending in recovery, malignant tertian rings were found, "one corpuscle in every three" containing these forms; in the fatal case, the blood findings regarding the type of malaria were not recorded.

Paisseau and Lemaire,[22] in 1917, reported two cases of gangrene of malarial origin. In each instance the gangrene was symmetrical and involved the lower extremities. Both cases were fatal. Blood examination in each showed a severe infection with *Plasmodium falciparum.*

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[*] Read before the Mobile County Medical Society, Oct 3, 1925

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[2] Brusa· Il Morgagni, Aug 31, 1921; abstr Brit. M. J. **2**: 75 (Nov 19) 1921

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[4] Buerger, Leo: The Circulatory Disturbances of the Extremities, Philadelphia, W. B Saunders Company, 1924.

[5] Darier, J: A Textbook of Dermatology, translated by Pollitzer, Philadelphia, Lea & Febiger, 1920, p 315

[6] Kerr, R R: Thrombosis of the Inferior Vena Cava, Brit. M. J. **2**: 1112 (Dec 31) 1921

[7] Ransome, A S, and Corner, E M.: Gangrene of Limbs During Convalescence from Diphtheria, Internat. Clin **4**: 47, 1910

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[9] Barraud, S Ueber Extremitäten Gangräne in jugendlichen Alter, Deutsch Ztschr. f. Chir. **74**: 237-292, 1904

[10] Dana, C L Textbook of Nervous Diseases, Ed. 4, New York, *William Wood & Co, 1897, p 206*

[11] Castellani, A, and Chalmers, A J: Manual of Tropical Medicine, Ed 2, New York, William Wood & Co, 1913, p 910

[12] DaCosta, J C· Modern Surgery, Ed. 7, Philadelphia, W. B Saunders Company, 1918, p 172

[13] Elliot, G T, in Morrow's System of Genito Urinary Diseases, Syphilology and Dermatology, New York, D. Appleton & Co **3**: 376, 1895

[14] Stelwagon, H W· Diseases of the Skin, Ed. 7, Philadelphia, W B *Saunders Company*, 1914, *p* 432

[15] Church, A, and Peterson, F.· Nervous and Mental Diseases, Ed 9, Philadelphia, W B Saunders Company, 1921, p. 547.

[16] Cited by Leloir (footnote 19)

[17] Laveran, cited by Blumer in Osler's Modern Medicine, New York, Lea & Febiger **4**: 516, 1908

[18] Calmette, E Des rapports de l'asphyxie locale des extrémites avec la fievre intermittente paludeenne, Rec de men. de med mil. **33**: *24 51 (Jan) 1877*

[19] Leloir, H., in Twentieth Century Practice, New York, William Wood & Co, **5**: 807, 1896

[20] Osler, William A Case of Multiple Gangrene in Malarial Fever, Bull Johns Hopkins Hosp **11**: 41 (Feb) 1900

[21] Hammond, F. A L Malarial Gangrene, Indian M. Gaz **48**: 228 (June) 1913.

[22] Paisseau and Lemaire Deux cas de gangrène des membres d'origine palustre, Bull et mem Soc. med d hôp de Paris **41**: 219 235 (Feb 9) 1917.

ETIOLOGY AND MECHANISM OF SYMMETRICAL GANGRENE

It is agreed that gangrene is due to lack of nourishment of the part affected. Symmetrical gangrene is usually of the dry type, because it is the result of an obstruction opposed to the inflow of arterial blood. According to MacCallum,[23] this may be an effect of the active contraction of the blood vessels through the intermediation of the vasomotor system, or to a complete obstruction or blocking of the artery by some foreign substance that is lodged there.

The arterial obstruction may, therefore, be due to: (1) constriction of the arterioles; (2) embolism, or (3) thrombosis.

1. *Constriction of the Arterioles.*—Darier,[5] Church and Peterson,[15] Greene,[24] Dennis,[25] Adson and Brown,[26] Kaposi[27] and Calmette[16] subscribe to the view that vasoconstriction may cause gangrene. Raynaud[28] held that the gangrene is probably caused by a tetanic condition of the great sympathetic nerve which in turn produces contracture of the arterioles. Trophic gangrene, in the opinion of Keene,[29] is probably caused by a spasm or paralysis of the arterioles, rather than through special trophic nerves governing nutrition, thrombosis preceded by nutritive alterations in the vascular intima being considered the most prominent factor. It is also his opinion that gangrene produced by cold or by long continued action of certain drugs, such as ergot, as well as Raynaud's gangrene, is explained in a similar manner, but he states that it is "a question as to whether the mortification is due directly to vascular spasm or arises secondarily from alterations in the intima followed by obstructive thrombosis, with the chances in favor of the latter."

Neuritis is regarded as one of the causes of symmetrical gangrene. It is so regarded by Pitres[30] and Vaillard,[30] whose views have not been generally accepted. Tyson[31] takes the view that the theory of arteriole spasm suggested by Raynaud himself best explains the condition. In nine cases of gangrene following diphtheria reported by Ransome and Corner,[7] one case is termed Raynaud's disease. It is important to differentiate the symmetrical gangrene of the extremities of the Raynaud type from the gangrene due to embolism and thrombosis. The differentiation has been pointed out by Osler,[20] who states that the phenomena of Raynaud's disease may occur as a sequence of any of the specific fevers, and that a large proportion of all the cases of local gangrene occurring during or after one of the fevers have nothing whatever to do with this affection. To aid in such differentiation is the fact that Raynaud's gangrene usually develops in paroxysms and all degrees may be observed, at times a simple asphyxia of the limb, at others an asphyxia followed by gangrene. Moreover, in Raynaud's disease there is possibly an accentuation rather than an absence of the arterial pulsations in the affected limb as found in embolism and thrombosis. In both embolism and thrombosis this absence of pulsation in the arterial trunks of the limbs is the one symptom, above all others, which most readily affirms the existence of such conditions.

2. *Embolism or Plugging of the Arterioles.*—"Embolism," as defined by Welch,[32] "is the impaction in some part of the vascular system of any undissolved material brought there by the blood current." In six of the nine cases of gangrene complicating diphtheria reported by Ransome and Corner,[7] the gangrene was due to embolism following cardiac thrombosis. The cause of cerebral attacks in malaria, according to Manson,[33] has been found on postmortem examination to be due to embolism by the accumulation of the malarial parasites in the capillaries of the nerve centers involved. Marchiafava and Bignami[34] state that the circulatory changes found in the brain capillaries may occur in other organs and systems. MacCallum,[23] in explaining the cause of embolism, mentions bacteria and protozoa as possible causative factors. Castellani,[35] in discussing the localization of the malarial parasites, refers to the localization in many organs; he even mentions localization of the parasites in the appendix. In a necropsy mentioned by Hines[36] on a patient dying of estivo-autumnal malaria, the capillaries of the brain were found to be plugged with malarial parasites. The same condition may exist in the extremities of those affected with malaria, thus causing gangrene.

3. *Thrombosis.*—The obstruction opposed to the inflow of arterial blood may be a thrombus. There seems to be a unanimity of opinion that gangrene ensues when the arterial circulation is thus impeded. Among those holding this view are Warbasse,[37] Buerger,[4] Darier,[5] DaCosta,[12] Brusa,[2] Tyson,[31] Osler and McCrae,[38] Learmonth,[3] and Kramer.[39] According to Buerger,[4] the clotting process is apt to occur in the arteries of the extremities because of the small size of the vessels and the retardation of the blood stream; the clot may not adhere sufficiently to obliterate the artery, but usually obliteration of the artery occurs with extension of the thrombotic process toward the periphery. Goldschmidt[28] inclines to the view that there is an obliterating endarteritis. Schuster[40] and d'Arnellas[40] report cases of gangrene of the toes as due to ascending peripheral arteries caused by syphilis. Fox[41] reports a case presenting Raynaud's phenomena, viz., local syncope, local asphyxia, and gangrene, occurring in syphilitic endarteritis, which caused obliteration of the vessels. Chesky[42] considers that arterial occlusion may occur through septic or toxic endarteritis; on such a lesion a thrombus may be engrafted Many authors report the finding of thrombi on pathologic examination of amputated parts. Johannsen[43]

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[23] MacCallum, W. G.: A Textbook of Pathology, Ed. 2, Philadelphia, W. B. Saunders Company, 1921, pp. 18, 30, 120 and 777.

[24] Greene, C. L.: Medical Diagnosis, Ed. 5, Philadelphia, P. Blakiston's Son & Co., 1922, pp. 463 and 1270.

[25] Dennis, F. S.: Gangrene, Internat. Clinics, January, 1892, p. 100.

[26] Adson, A. W., and Brown, G. E.: Treatment of Raynaud's Disease, J. A. M. A. **84**: 1908 (June 20) 1925.

[27] Kaposi, M.: Pathology and Treatment of Diseases of the Skin, translation from the German by Johnston, New York, William Wood & Co., 1895, p. 263.

[28] Cited by Dieulafoy (footnote 1).

[29] Keene, W. W.: Surgery, Its Principles and Practice, Philadelphia, W. B. Saunders Company **1**: 313-325, 1912.

[30] Cited by Keene (footnote 29).

[31] Tyson, James: The Practice of Medicine, Philadelphia, P. Blakiston's Son & Co., 1896, p. 1086.

[32] Cited by Mason (footnote 45).

[33] Manson, Patrick: Tropical Diseases, Ed. 5, New York, William Wood & Co., 1914, p. 74.

[34] Marchiafava, E., and Bignami, A.: "Malaria," in Twentieth Century Practice of Medicine, New York, William Wood & Co., **19**: 350, 1900.

[35] Castellani, Aldo: Proceedings of the International Conference on Health Problems in Tropical America, Kingston, Jamaica, Aug. 1, 1924, Boston, United Fruit Company, 1924, p. 73.

[36] Hines, L. E.: Accidental Malarial Infection in Syphilis of the Brain, J. A. M. A. **83**: 1161 (Oct. 11) 1924.

[37] Warbasse, J. P.: Surgical Treatment, Philadelphia, W. B. Saunders Company **1**: 318, 1923.

[38] Osler, William, and McCrae, Thomas: The Principles and Practice of Medicine, Ed. 9, New York, D. Appleton & Co., 1923, pp. 1111, 678 and 248.

[39] Kramer, cited by Buerger (footnote 4, p. 452).

[40] Quoted by Fox (footnote 41).

[41] Fox, G. H.: Notes on Some Cases of Symmetrical Gangrene: Relation to Arteritis, M. Rev. of Rev. **13**: 371 (May) 1907.

[42] Chesky, V. E.: Gangrene of t[illegible]ating Puerperal Sepsis, Surg. Gynec. & Obst. **38** [illegible]

[43] Johannsen, cited by Sajous: [illegible] Medicine, Philadelphia, F. A. Davis Company **6** [illegible]

reports a case of gangrene of the foot noted during the course of an attack of influenza; the arteries of the amputated part were found to be occluded by thrombi. Poupon,[44] in 1883, in a necropsy in a case of dry gangrene of the leg following diphtheria, found a clot 3 cm. long in the popliteal artery. In one case of gangrene in the foot following malaria, Barraud [9] noted thrombosis of the popliteal artery of the amputated part. The extent of the gangrene does not depend solely on the size and importance of the occluded artery; on the contrary, it depends on the completeness of the establishment of the collateral circulation, which is usually sufficient to reestablish the circulation in the greater part of the territory supplied by the occluded vessel.

THE CAUSE OF THROMBOSIS

A thrombus may be defined as a solid mass or plug formed in the living heart or blood vessels from constituents of the blood (Welch [32]). According to the opinion of Welch,[32] MacCallum [23] and Mason,[45] the principles concerned in thrombus formation are similar to those concerned in normal blood coagulation. Most of the theories on blood coagulation assume that in the circulating blood there is no clotting because there is no active thrombin, this substance being present in its inactive form, prothrombin. Howell's [46] theory assumes that "prothrombin can be changed to thrombin by the action of calcium alone, but that in the circulating blood this reaction is prevented by the presence of an inhibitory substance which affects the prothrombin and may, therefore, be designated in general as an antiprothrombin. The function of the tissue extract, derived from the platelets or other cells, which in this theory is believed to consist essentially of cephalin or a cephalin-protein compound, is to neutralize this inhibitory substance and liberate prothrombin so that it can be activated by the calcium." Howell [46] further states that when the internal coat of a blood vessel is injured, as for instance by a ligature, the altered endothelial cells act as a foreign substance; according to the investigations of Durante,[47] stagnant blood clots in living vessels only when their endothelium is in an abnormal condition. Weigert [47] and Zahn [47] lay especial stress on destruction of white blood corpuscles in the formation of a thrombus, and Fitz [48] states that the destruction of the red blood corpuscles is also of importance. Mason [45] assumes that the circulating blood as it passes through the normal tissues is maintained in a delicate equilibrium and that various factors, especially those substances capable of carrying an electronegative charge, are capable of disturbing this equilibrium, the most common injury being injury to the tissues. He quotes Morse [32] as calling attention to the fact that an extract prepared from the intima of the blood vessels is an active coagulant. According to the observation made by Wooldridge,[32] the stroma of the red cells when freed from hemoglobin acted as any tissue extract in accelerating blood coagulation. Aschoff,[49] in his classification of thrombi, describes one form of thrombus which is composed of the débris of red cells and other cells which may appear in quantities after some hemolytic process.

Aschoff [50] says, in connection with the subject of thrombosis, that we may "in all justice assign to infection the most important etiological rôle." He mentions that in thrombosis there is not a single cause, but many conditions which are closely related to the occurrence of thrombosis. Among these may be mentioned: "first, changes in the blood plasma (diminished or increased coagulability); secondly, changes in the blood elements (increased or diminished powers of agglutination); thirdly, changes in the blood flow (slowing and formation of eddies); and lastly, changes in the vessel wall itself (endothelial damage)." As regards the phenomena that precede thrombosis, the same author leaves unsettled the point as to whether such phenomena are of a type "long known to workers in bacteriology or serology, or whether they are chemicophysical" in nature; he further states that the agglutinability of platelets depends on the chemicophysical characters of the blood stream in which they are suspended.

According to MacCallum,[23] a thrombus begins by deposition on the walls of blood channels of a minute pearly translucent mass of platelets which grows by adhesion of other platelets as they come by; the platelets quickly catch passing leukocytes; fibrin forms and entangles red blood corpuscles. Even the final cessation of bleeding from a vessel is really due to a form of thrombosis, since the clot is produced in streaming blood.

The question as to the proximate cause of the formation of thrombi has been answered in various ways. Most of the older writers assumed a primary injury of the wall (Eberth,[49] Schimmelbusch [49] and Welch [49]), which allowed the production of the thromboplastic substance. Aschoff [50] and his colleagues contend that thrombi are essentially produced by some mechanical obstruction or slowing of the stream. MacCallum [23] says: "As a predisposing and later as a guiding factor controlling the architecture of the thrombus, modifications of the velocity and direction of the current are undoubtedly of great importance, but for the first step in the lodgment of platelets, injury to the endothelium seems to me to be of prime significance."

In considering the endothelial damage in the arterial wall in connection with the mechanism of thrombosis, it is necessary to take into consideration the relationship that exists between bacteria or their poisons and the arterial lesions, as manifested by clinical observation, postmortem findings and animal experimentation.

Frothingham [51] made a study of the aortas of thirty-six persons who died from the acute infections. Of these, twenty-one showed thickening of the intima, eleven showed fat in the intima, and four had fat in the muscle fibers of the media.

Hektoen [52] succeeded in producing endarteritis with the tubercle bacillus. The organisms, in suspension, were injected into the carotid artery of a dog, and the animal was killed about a month later. Necropsy revealed numerous minute grayish nodules in the vessels of the convexity of the brain hemisphere. Tubercle bacilli were found in these nodules, the wall of the vessel being converted into granulation tissue.

Frothingham [53] attempted to reproduce in rabbits and guinea-pigs an arterial lesion similar to that found in man. He worked with diphtheria toxin. He used rabbits and injected them with large doses. All died in from forty-eight hours to three days. Microscopic examination of the kidneys showed the glomerular tufts necrotic in places with fibrin deposit in them. The lesion was not identical with the lesion that occurs in human cases, but there was a similarity in that there was a necrosis of the vessel wall plus formation of fibrin.

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[44] Poupon, in Progrès méd., 1883, p. 10, quoted by Ransome and Corner (footnote 7).

[45] Mason, E. C.: Blood Coagulation, Surg. Gynec. & Obst. **39**: 421 (Oct.) 1924.

[46] Howell, W. H.: Textbook of Physiology, Philadelphia, W. B. Saunders Company, 1924, pp. 460 and 463.

[47] Cited by Fitz (footnote 48).

[48] Fitz, R. H., in Pepper's System of Medicine, Philadelphia, Lea Brothers & Co. **1**: 57, 1885.

[49] Cited by MacCallum (footnote 23).

[50] Aschoff, L.: Lectures on Pathology, New York, Paul B. Hoeber, Inc., 1924, p. 253.

[51] Frothingham, Channing: The Relation Between Acute Infectious Diseases and Arterial Lesions, Arch. Int. Med. **8**: 153 (Aug.) 1911.

[52] Hektoen, Ludvig: The Vascular Changes of Tuberculous Meningitis, Especially with Tuberculous Endarteritis, J. Exper. Med. **1**: 112, 1896.

[53] Frothingham, Channing: A Glomerular and Arterial Lesion Produced in Rabbits' Kidneys by Diphtheria Toxin, J. M. Res. **30**: 365, 1914.

Klotz[51] reports the findings in fifteen cases in which the patients died of rheumatic fever or with a history of rheumatic fever. Three patients had one attack; four, a recurrent attack, and eight, chronic rheumatism. The site of predilection in these cases he found to be in the ascending limb of the aorta. Here there was an inflammatory exudate about the vasa vasorum of the adventitia, accompanied by degenerative changes of the neighboring cells and elastic fibers.

Kretz[55] reports that in 6,511 cases he was unable to find a single instance in which thrombus formation was not associated with previous infection. Buerger[4] is more conservative. He states that necropsy material would suggest that the infectious process plays a siderable rôle in about half of the cases.

ccording to James,[56] the toxin of pernicious malaria erts a specific action on the walls of the cerebral capillaries, softening the endothelial cells and causing the infected erythrocytes to adhere to the capillary

day he had chills and fever; the following day he had fever again. Chills followed by fever continued daily until the arrival of the ship at Mobile. The day before arrival, he became delirious and his feet and legs pained him. On arrival of the ship in Mobile, on the ninth day of his illness, he was brought to the hospital by ambulance in a delirious condition. Five other patients, members of the crew of the same ship, were admitted to the hospital at the same time, all of whom, on microscopic examination of the blood, were found to have malaria; the estivo-autumnal parasite was found in two of them.

Examination.—The patient was poorly nourished and anemic. The temperature by rectum was 36 C. (96.8 F.); respiration, 32; pulse, 106, slightly irregular and of low tension. He was restless and delirious, tossing in bed; he talked incoherently. The pupils were dilated, the sclerotics pale and lemon tinted. The tongue was coated and the breath foul. The skin was clammy and pale. Moist râles were heard over both lungs, especially over the bases posteriorly. A slight systolic murmur was heard best at the apex, but was not transmitted. The heart was not enlarged. The apex beat was in the fifth interspace, 7.5 cm. from the midsternal line. The spleen was only slightly enlarged. The genito-urinary examination was negative The reflexes were normal. The extremities were cold. The toes were livid and insensitive, and showed dark blebs on the ends. Blebs were also evident on the dorsal and plantar surfaces of both feet. All toes on both feet were involved, the great toes more than the others, and the right great toe more than the left. On the inner surface of the feet near the ankles were irregular, mottled dark areas. On the plantar surface of the right foot was noted an area about

9,000; red blood cells, 4,035,000. The differential count gave: small mononuclears, 33 per cent; large mononuclears, 3 per cent; polymorphonuclears, 64 per cent. A blood smear was negative for malarial parasites. The Wassermann test of the blood was negative. The general condition of the patient was greatly improved. The heart murmur had disappeared. The right great toe showed dry gangrene, a distinct line of demarcation being present at the metatarsophalangeal joint; the plantar surface showed an area of dry gangrene approximately 5 cm. in diameter. The distal phalanx of the great toe and tip of the third toe of the left foot showed some evidence of dry gangrene. Both feet were sensitive to the touch except in the area of gangrene. The patient complained of pain and tingling in both feet.

Jan. 15, 1924, fifty-six days after admission, the right great toe was black and mummified. It was amputated at the metatarsophalangeal joint. Chemical examination of the blood showed normal findings: blood sugar, 74 mg. per hundred cubic centimeters of blood; nonprotein nitrogen, 26 mg., and urea nitrogen, 13 mg. A kidney function test, 1 cc. of phenolsulphonphthalein being given intramuscularly, showed 40 per cent excretion in two hours. The urine still showed a trace of albumin, a few red blood cells, and a few hyaline and granular casts.

February 13, eighty-four days after admission, urinalysis was negative. The albumin had completely disappeared. A

this is kept in check by the action of antihemolysin, which is formed in the body, but under certain circumstances may fail to be produced in sufficient quantity, so that hemoglobinemia with hemoglobinuria may occur. Stephens,[51] in discussing the cause of hemoglobinuria, states that until the presence of a hemolysin can be negatived by good evidence, we may adopt this as a provisional hypothesis.

The absence of pulsation in the dorsalis pedis arteries eliminates the existence of symmetrical gangrene of the Raynaud type due to vasoconstriction. Such absence of pulsation points to either embolism or thrombosis. From the facts presented, however, we may assume that thrombosis is the most probable causative factor.

The gangrene was not due to embolism associated with heart disease. There was no evidence of heart disease in this case. A slight systolic murmur heard at the apex was clearly functional.

Gangrene due to chemicals and drugs was excluded.

Traumatism was excluded as a cause of gangrene.

Syphilis was eliminated as a cause of gangrene. There was no history of syphilitic infection; the Wassermann test was negative on three different occasions. There man. He worked with diphtheria toxin. He used rabbits and injected them with large doses. All died in from forty-eight hours to three days. Microscopic examination of the kidneys showed the glomerular tufts necrotic in places with fibrin deposit in them. The lesion was not identical with the lesion that occurs in human cases, but there was a similarity in that there was a necrosis of the vessel wall plus formation of fibrin.

Klotz[54] reports the findings in fifteen cases in which the patients died of rheumatic fever or with a history of rheumatic fever. Three patients had one attack; four, a recurrent attack, and eight, chronic rheumatism. The site of predilection in these cases he found to be in the ascending limb of the aorta. Here there was an inflammatory exudate about the vasa vasorum of the adventitia, accompanied by degenerative changes of the neighboring cells and elastic fibers.

Kretz[55] reports that in 6,511 cases he was unable to find a single instance in which thrombus formation was not associated with previous infection. Buerger[4] is more conservative. He states that necropsy material would suggest that the infectious process plays a considerable rôle in about half of the cases.

According to James,[56] the toxin of pernicious malaria exerts a specific action on the walls of the cerebral capillaries, softening the endothelial cells and causing the infected erythrocytes to adhere to the capillary walls. Stephens[57] states that in "estivo-autumnal malaria fatty degeneration of the endothelium is apparently a well recognized condition in the cerebral capillaries," but he does not know how far it exists in other parts of the body. Thomson[58] says: "In the human body and also in cultures, as soon as the parasites lose their ring shape—and pigment collects—they clump in masses round the endothelial cells," and that this clumping round the endothelial cells explains their arrest in the capillaries.

REPORT OF CASE OF SYMMETRICAL GANGRENE OF FEET COMPLICATING MALARIAL FEVER

The following case is deemed worthy to report, owing to the fact that only four cases are found reported in the literature, so far as I know, in which the occurrence of symmetrical gangrene is so definitely proved to be of malarial origin:

History.—An American seaman, aged 25, single, white, admitted to the U. S. Marine Hospital, Mobile, Ala., Nov. 19, 1923, had used considerable alcohol in 1920, 1921 and 1922, but not since. He smoked moderately. The family history was negative. He had diphtheria when 8 years old, and had sustained several injuries in childhood, including a fracture of the right humerus and a burn of the left foot. There was no history of venereal disease. He had no trouble in his extremities. He never noted a smoky or bloody appearance of the urine. During the fall of 1923, he was on a voyage in the tropics. He was shipwrecked off Haiti, October 10. After forty-eight hours he was picked up and carried to Santo Domingo, where he stayed for one month. In Santo Domingo, three members of his ship were taken sick with malaria and were sent to a hospital. While in Santo Domingo, he visited the government forts several times and stated that many cases of malaria prevailed there. Eight days before admission to the hospital, he began to feel weak; the next day he had chills and fever; the following day he had fever again. Chills followed by fever continued daily until the arrival of the ship at Mobile. The day before arrival, he became delirious and his feet and legs pained him. On arrival of the ship in Mobile, on the ninth day of his illness, he was brought to the hospital by ambulance in a delirious condition. Five other patients, members of the crew of the same ship, were admitted to the hospital at the same time, all of whom, on microscopic examination of the blood, were found to have malaria; the estivo-autumnal parasite was found in two of them.

Examination.—The patient was poorly nourished and anemic. The temperature by rectum was 36 C. (96.8 F.); respiration, 32; pulse, 106, slightly irregular and of low tension. He was restless and delirious, tossing in bed; he talked incoherently. The pupils were dilated, the sclerotics pale and lemon tinted. The tongue was coated and the breath foul. The skin was clammy and pale. Moist râles were heard over both lungs, especially over the bases posteriorly. A slight systolic murmur was heard best at the apex, but was not transmitted. The heart was not enlarged. The apex beat was in the fifth interspace, 7.5 cm. from the midsternal line. The spleen was only slightly enlarged. The genito-urinary examination was negative The reflexes were normal. The extremities were cold. The toes were livid and insensitive, and showed dark blebs on the ends. Blebs were also evident on the dorsal and plantar surfaces of both feet. All toes on both feet were involved, the great toes more than the others, and the right great toe more than the left. On the inner surface of the feet near the ankles were irregular, mottled dark areas. On the plantar surface of the right foot was noted an area about 5 cm long and 5 cm. wide; this area was not raised and was of bluish discoloration. Both feet were cold to the touch, and were swollen. There was loss of pulsation in the dorsalis pedis artery, in both feet. The hemoglobin was 75 per cent; the white blood cells numbered 9,200, of which small mononuclears were 26 per cent; large mononuclears, 6 per cent, and polymorphonuclears, 58 per cent. Ring forms of the estivo-autumnal parasite were found in great numbers; a few crescents were observed. The urine was definitely smoky in appearance; the test for albumin gave a moderate ring; there was no sugar; a few epithelial cells were noted; the specific gravity was 1.020; there were a few red blood corpuscles; there were hyaline and granular casts.

Treatment.—General supportive treatment was administered; fluids were given by mouth, and moist antiseptic dressings, together with heat, were applied to the feet. Quinine dihydrochloride, 15 grains (1 Gm.), was given intravenously shortly after admission and after the diagnosis of malaria had been made; thereafter the quinine, 10 grains (0.65 Gm.), was given intravenously every six hours, for four doses. Following intravenous medication, quinine sulphate was given by mouth, 15 grains three times a day, for four days; later quinine was administered in 5-grain (0.3 Gm.) doses by mouth, three times a day.

Course.—The outstanding features of the disease, at first, were the subnormal temperature and the delirious condition of the patient. In response to the intravenous medication of quinine, the mental condition rapidly cleared. The second day after admission he complained of pain in the legs; on this day the smoky appearance of the urine disappeared; the urine was amber. The pulse gradually fell and became 90 on the fourth day after admission. The temperature rose to 38 C. (100.4 F.) on the fourth day and remained at about this level until the tenth day. This rise was thought to be due to sepsis from the gangrenous condition of the feet. The affected areas of the feet became black, and were icy cold to the touch. The blebs broke, leaving exposed surfaces. A definite line of demarcation later developed, the tissues appearing somewhat red and mottled in the area on the proximal side of the line.

December 18, thirty days after admission, the urine was acid and of amber color; there was a trace of albumin, but no sugar; the specific gravity was 1.013; there were a few red blood cells and a few hyaline and granular casts. The hemoglobin was 80 per cent; white blood cells numbered

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54. Klotz, O.: Arterial Lesions Associated with Rheumatic Fever, J. Path. & Bacteriol. **18**: 259, 1913-1914.

55. Kretz, quoted by Buerger (footnote 4, p. 127).

56. James, W. M.: Proc. Internat. Conference on Health Problems in Tropical America, p. 67.

57. Stephens, J. W. W.: Proc. Internat. Conference on Health Problems in Tropical America, pp. 127 and 71.

58. Thomson, J. G.: Proc. Internat. Conference on Health Problems in Tropical America, p. 132.

9,000; red blood cells, 4,035,000. The differential count gave: small mononuclears, 33 per cent; large mononuclears, 3 per cent; polymorphonuclears, 64 per cent. A blood smear was negative for malarial parasites. The Wassermann test of the blood was negative. The general condition of the patient was greatly improved. The heart murmur had disappeared. The right great toe showed dry gangrene, a distinct line of demarcation being present at the metatarsophalangeal joint; the plantar surface showed an area of dry gangrene approximately 5 cm. in diameter. The distal phalanx of the great toe and tip of the third toe of the left foot showed some evidence of dry gangrene. Both feet were sensitive to the touch except in the area of gangrene. The patient complained of pain and tingling in both feet.

Jan. 15, 1924, fifty-six days after admission, the right great toe was black and mummified. It was amputated at the metatarsophalangeal joint. Chemical examination of the blood showed normal findings: blood sugar, 74 mg. per hundred cubic centimeters of blood; nonprotein nitrogen, 26 mg., and urea nitrogen, 13 mg. A kidney function test, 1 cc. of phenolsulphonphthalein being given intramuscularly, showed 40 per cent excretion in two hours. The urine still showed a trace of albumin, a few red blood cells, and a few hyaline and granular casts.

February 13, eighty-four days after admission, urinalysis was negative. The albumin had completely disappeared. A kidney function test (phenolsulphonphthalein) showed 60 per cent excretion in two hours. A Wassermann test of the blood was negative.

February 24, three months and five days after admission, the patient was discharged from the hospital in good physical condition. The feet had completely healed, except for a tingling sensation on walking.

The diagnosis was: estivo-autumnal malaria of the delirious pernicious type; symmetrical gangrene of both feet; acute nephritis, and hemoglobinuria.

COMMENT

That the disease in this instance was pernicious malarial fever is beyond question. The three pathognomonic signs of malaria as enumerated by Manson were evident: *periodicity, effect of quinine,* and the *presence of the malarial parasite.* The ring forms of the estivo-autumnal parasite were found in profusion in the red blood cells; also a few of the more mature organisms in the shape of rounded crescents.

There arises for consideration the coincident occurrence of malaria and so-called Raynaud's disease existing as separate and distinct entities. A careful history revealed the fact that there had been no prior trouble in the extremities as regards pain, blanching or cyanosis. There was no history of interrupted or intermittent paroxysms, simulating or suggesting Raynaud's disease. No members of the family were similarly affected. The patient was well and healthy until nine days before admission to the hospital, and he was pursuing a gainful occupation without pain or discomfort in his extremities or elsewhere in his body.

The occurrence of acute nephritis as a complication of malaria has not been unusual. Osler and McCrae [58] report the occurrence of acute nephritis in more than 4.5 per cent of patients suffering from estivo-autumnal fever.

The hemoglobinuria in this case was undoubtedly due to the parasite causing pernicious malarial fever. It will be noted that hemoglobinuria existed before quinine was administered, and the patient had received no quinine prior to admission to the hospital. As shown by de Blasi,[59] Brem [59] and Zeiler,[59] the malarial parasites give rise to a hemolysin which probably varies in quantity and quality with different strains of parasites; this is kept in check by the action of antihemolysin, which is formed in the body, but under certain circumstances may fail to be produced in sufficient quantity, so that hemoglobinemia with hemoglobinuria may occur. Stephens,[59] in discussing the cause of hemoglobinuria, states that until the presence of a hemolysin can be negatived by good evidence, we may adopt this as a provisional hypothesis.

The absence of pulsation in the dorsalis pedis arteries eliminates the existence of symmetrical gangrene of the Raynaud type due to vasoconstriction. Such absence of pulsation points to either embolism or thrombosis. From the facts presented, however, we may assume that thrombosis is the most probable causative factor.

The gangrene was not due to embolism associated with heart disease. There was no evidence of heart disease in this case. A slight systolic murmur heard at the apex was clearly functional.

Gangrene due to chemicals and drugs was excluded.

Traumatism was excluded as a cause of gangrene.

Syphilis was eliminated as a cause of gangrene. There was no history of syphilitic infection; the Wassermann test was negative on three different occasions. There was no adenopathy or other evidence of syphilis.

Gangrene from heat or cold was eliminated.

Senile gangrene was eliminated on physical examination and on the symmetry of the lesions.

Diabetic gangrene was eliminated on the laboratory findings. The urine was negative for sugar; examination of the blood showed blood sugar to be present in the amount of 74 mg. per hundred cubic centimeters of blood.

Thrombo-angiitis obliterans was eliminated on the history of the case, because of the absence of intermittent claudication, the absence of migrating phlebitis, the absence of a steady progressive course and the absence of redness.

Polyneuritis, as seen in beriberi, was eliminated on the history, because of the sudden occurrence of the gangrene, the absence of hyperesthesia and the presence of the patellar reflexes.

Erythromelalgia was eliminated because of the absence of bounding arterial pulsations, the absence of redness and the absence of a burning sensation in the feet.

Syringomyelia was eliminated by the onset being sudden rather than insidious, the absence of muscular atrophy, absence of sensory dissociation, and the symmetry of the lesions.

CONCLUSION

From the facts presented, this was an unquestioned case of symmetrical gangrene caused by estivo-autumnal malaria, in which unusually favorable results followed specific intravenous therapy.

Development of Psychologic Conception in Medicine.—The actual historical line of development of the pyschological conception in medicine has its roots, though hardly its logical ancestry, in the seventeenth century views and practices with regard to animal magnetism, and the personal power of healing. The ground for this statement is that, although none of these procedures were employed as the result of a psychological conception of disease or of therapy, and none of them form part of the actual building of psychopathology, yet they led to the observation of certain phenomena which were ultimately incorporated in the conception of suggestion, the conception which may be regarded as the foundation stone of modern psychopathology.—Hart, Bernard: *Lancet* **1:**587 (March 20) 1926.

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[59] Cited by Castellani and Chalmers (footnote 11).

[illegible] *Suggestions and* [illegible]

[illegible] SURGICAL WOUND

[illegible] SAN FRANCISCO

[illegible] wounds is of prime [illegible]ed. For use in a [illegible] instruments and dressings [illegible] individual service sterile [illegible] employment of the usual [illegible] considerable laundry [illegible] washing. The ordinary [illegible] are excellent and inexpen- [illegible] from one another and [illegible] side folded, so as to [illegible] later. The towels are then [illegible] and sterilized under steam [illegible] one end of the envelop is [illegible] the illustration. Each sterile

[illegible] opened ready for use.

[illegible] opened, and the sterile dressings [illegible] the sterile field, ready for the [illegible]. The paper towel, when used, is [illegible] the soiled dressings folded inside.

[illegible] ANOMALY: FREE FIBROUS CORD [illegible] THROUGH THREE HEART [illegible] TO THE AORTA †

[illegible], M.D., PHILADELPHIA

[illegible] finding is recorded primarily [illegible] Various unusual heart abnor- [illegible] in the literature, but our search for [illegible] or like this one has been in vain; as [illegible] this anomaly is the only one of its [illegible]

[illegible] aged 23, came to necropsy with a clinical [illegible] puerperal psychosis. The history, clinical [illegible] other necropsy findings are of no consequence [illegible] According to Dr. J. F. Stauffer of the [illegible] General Hospital, on auscul[illegible] here was a [illegible] mur- [illegible] and, at the apex, a "s[illegible] [illegible] sounded like a cross betw[illegible] [illegible] was heard, which could no[illegible] [illegible] Pericarditis was [illegible] of tachycardia. The heart weighed 300 Gm; it was of [illegible] and showed slight rightsided dilatat[illegible] [illegible] and epicardium were not remarkable.

vessels were normal. The auricular and ventricular walls were of normal thickness, and the myocardium was of normal color and consistency. The endocardium and valves presented no organic lesions. The mitral valve, particularly the anterior leaflet, showed slight thickening along its line of closure, but was everywhere smooth and shining. The aortic cusps were not remarkable, except as described.

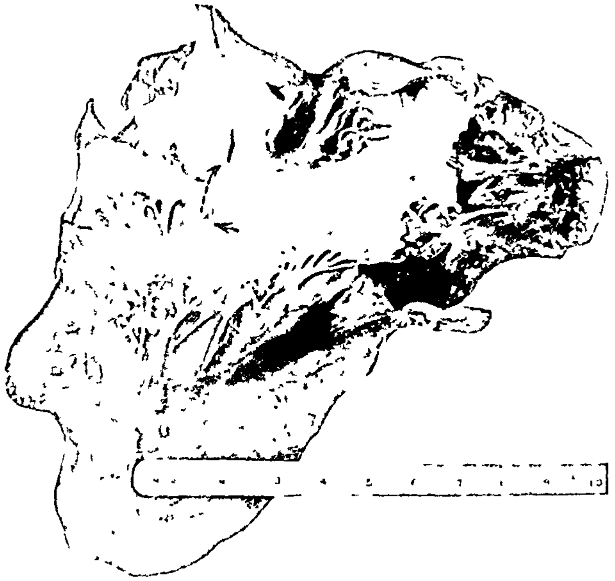

Fig. 1.—O[illegible] of cord in right auricle and its course to the annulus ovalis.

Arising from the right auricular wall 1.5 cm. from the annulus ovalis a tiny grayish-white, rounded, threadlike, smooth, glistening cord, 0.5 mm. in diameter, [illegible] freely and unattached toward the slightly patent foram[illegible] ear the

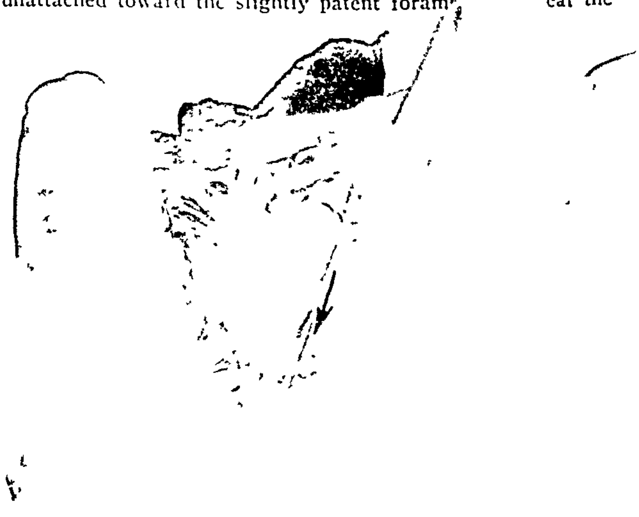

Fig. 2 [illegible] mitral [illegible] from sh[illegible] ventricle. Here it turned, and, forming a parabola-like curve around the anterior mitral leaflet, but sufficiently below it so as not to interfere greatly with its function, apparently, proceeded toward the aortic valve. As it approached the anterior cusp, it perpendicularly pierced it and attached itself to the wall of the aorta, 8 mm. beyond, thus virtually transfixing this cusp. It was as though a suture had been started in the right auricular wall and had been passed through the course of the fetal circulation, finally ending in the aortic wall, after penetrating the aortic valve. The cord tended to increase in size as it progressed: in its course through the left auricle and ventricle, it increased from 0.6 mm. to 2 mm. in diameter; it was thickest in its curve around the mitral leaflet, reaching a diameter of 2.5 mm. in this section. As it approached the aorta it again became smaller, averaging not more than 0.5 mm. as it pierced the cusp. The entire cord was about 12 cm. long; 1.5 cm. from its origin in the right auricle to the annulus ovalis; 5.5 cm. from the annulus ovalis to the curve in the left ventricle; 4 cm. from the curve to the aortic valve, and 8 mm. from the cusp to the aorta. It was rounded throughout its course, and on palpation was firm and solid, but easily pliable.

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* From the Department of Surgery, University of [illegible]

† From the Laboratory of Morbid Anatomy of the Philad[illegible]

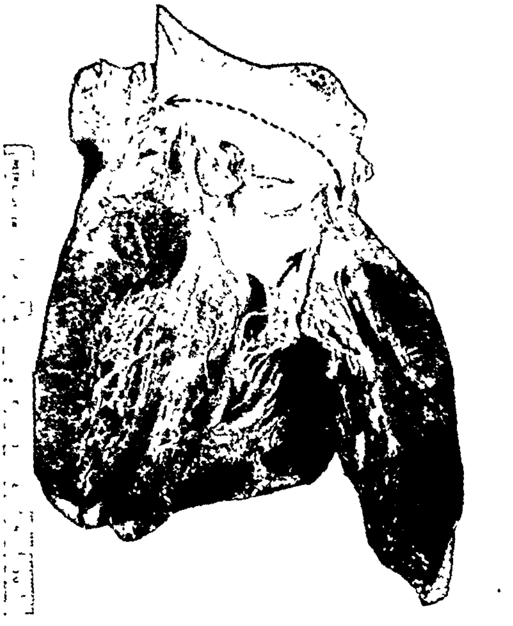


Fig. 3.—Course of cord from curve in left ventricle to aortic valve. Penetration of cusp and point of attachment on aortic wall may be noted. The cord was sectioned in the sinus of Valsalva in the routine performance of necropsy. The proximal portion can be seen in the sinus of Valsalva in the right of the illustration, and the distal portion appears as a small darkened projection near the left border of the aorta.

HISTOLOGIC STUDY

Hematoxylin and eosin, Mallory's aniline blue stain for fibrous tissue, and Weigert's elastic fiber stain preparations of both transversely and longitudinally cut sections, taken from blocks at different levels of the thickest portions of the cord, showed closely packed bundles of wavy, collagenous fibrils running longitudinally in the main, although a few took a circular course. An occasional flattened endothelial cell was observed on the outer surface. Transverse sections of the portion of the cord that had pierced the aortic cusp showed essentially the same picture; the dense fibrous tissue here tended to arrange itself in a sort of laminated fashion. Transverse sections taken through the auricular attachment of the cord showed a zone of fibrous tissue beneath the endocardium, gradually increasing in thickness as the cord was approached, and finally becoming a part of the cord. Sections through the aortic attachment showed an area of dense fibrous tissue, irregularly arranged, and apparently not intimately connected with the aortic wall tissues, beneath the endothelial coat of the intima. It appeared as though the cord had its roots in the auricular wall and was only superficially attached to the aortic wall. In no section was there any evidence of cardiac or smooth muscle tissue, elastic tissue, or Purkinje's fibers. Microscopically, then, the cord was composed of dense fibrous tissue, and was covered by a thin endothelial membrane.

COMMENT

An explanation for this anomaly is hardly possible. The points of attachment and course of the cord suggest that it might have been formed in the right auricle during fetal life in association with some irregularity in the fetal circulation, and, as a gradually lengthening process, passed through the foramen ovale and the aortic cusp before their development was complete. It would then be thought of as a fibrin-covered projection, constantly receiving more fibrin, which was slowly converted into fibrous tissue, until it became anchored in the aortic wall. Such an explanation is admittedly fantastic. There was nothing in the structure of the cord to indicate definitely its formation embryologically, yet its origin as a developmental anomaly seems the most probable. Histologic study refutes a parasitic origin of the cord, an origin that might possibly be suggested because of the superficial resemblance of the cord to a parasitic worm, grossly.

Clinically, the heart sounds were interesting. The presence of the cord in the blood stream probably served as an obstruction, however slight, to the blood flow. The looping of the cord around the anterior mitral leaflet, although redundant, may have handicapped to some degree its function, and the piercing and transfixion of the anterior aortic cusp no doubt interfered with its action. The peculiar sounds heard on auscultation may, perhaps, thus be accounted for.[1]

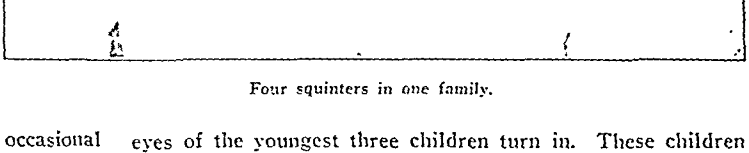
Thirty-Fourth and Pine streets.

A FAMILY OF SQUINTERS[*]

Frank H. Rodin, M.D., San Francisco

Four cases of strabismus in one family are sufficiently rare to justify this report.

Mrs. C. S., aged 46, seen at Stanford University Eye Clinic, July 14, 1925, had had fourteen children, nine of whom were living. Her right eye had always turned out. The eldest six living children and her husband have straight eyes. The eyes of the youngest three children turn in. These children were of normal birth and always healthy. The mother had always enjoyed good health. As far as can be ascertained, there is no history of strabismus on either the maternal or the paternal side of the family.



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[1] In a personal communication, Dr. Maude E. Abbott states that she has never seen an anomalous cord to this extent or location in the heart. In reviewing the anomalies of the heart in Osler's Modern Medicine (4: 353-355) Dr. Abbott cites several cases showing aberrant and anomalous chordae, the nearest approach to our case being one that extended from the left auricle to the left ventricle through the mitral orifice.

[*] From the Department of Ophthalmology, Stanford University Medical School.

Clinical Notes, Suggestions and New Instruments

STERILE PAPER TOWELS FOR SURGICAL WOUND DRESSINGS *

John Homer Woolsey, M.D., San Francisco.

Aseptic technic in the dressing of wounds is of prime importance, and is often poorly executed. For use in a surgical clinic, office or where sterile instruments and dressings are kept in bulk, the use of an "individual service sterile towel" is an excellent method. The employment of the usual linen towel is expensive, and demands considerable laundry work and renewal from the constant washing. The ordinary paper towels of rather coarse fiber are excellent and inexpensive substitutes They can be separated from one another and stacked with one corner of the closed side folded, so as to form an easy method for extraction later. The towels are then put in a hospital towel envelop and sterilized under steam pressure When they are needed, one end of the envelop is unpinned and opened, as shown in the illustration. Each sterile towel may then be withdrawn, opened, and the sterile dressings and instruments put out on the sterile field, ready for the individual patient or wound The paper towel, when used, is discarded, perhaps even with the soiled dressings folded inside.

Envelop of sterile paper towels opened ready for use

490 Post Street.

UNIQUE HEART ANOMALY: FREE FIBROUS CORD PASSING THROUGH THREE HEART CHAMBERS TO THE AORTA †

J. L. Goforth, M.D., Philadelphia

This interesting necropsy finding is recorded primarily because of its uniqueness. Various unusual heart abnormalities are described in the literature, but our search for conditions similar to or like this one has been in vain; as far as we can determine, this anomaly is the only one of its kind on record.

A white woman, aged 23, came to necropsy with a clinical diagnosis of postpuerperal psychosis. The history, clinical course, and the other necropsy findings are of no consequence and are omitted. According to Dr. J. F. Stauffer of the Philadelphia General Hospital, on auscultation there was a gallop rhythm, and, at the apex, a "sort of to-and-fro murmur which sounded like a cross between a friction rub and a murmur" was heard, which could not be definitely timed because of tachycardia. Pericarditis was suspected.

The heart weighed 300 Gm.; it was of normal size and shape, and showed slight rightsided dilatation. The pericardium and epicardium were not remarkable. The coronary vessels were normal. The auricular and ventricular walls were of normal thickness, and the myocardium was of normal color and consistency. The endocardium and valves presented no organic lesions. The mitral valve, particularly the anterior leaflet, showed slight thickening along its line of closure, but was everywhere smooth and shining. The aortic cusps were not remarkable, except as described.

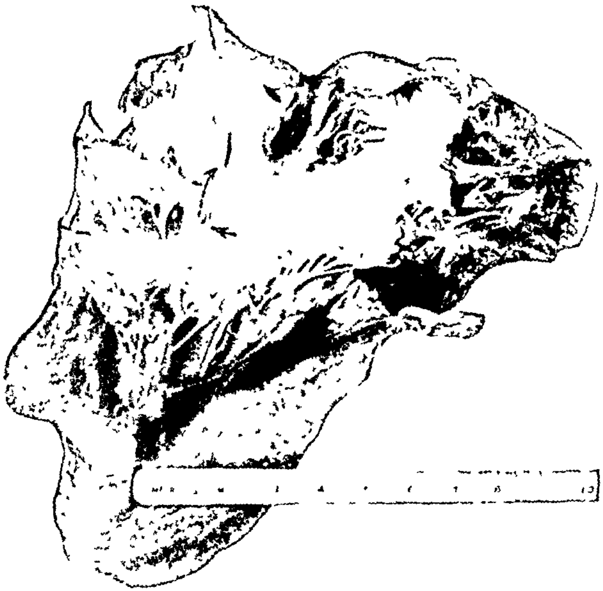

Fig 1 —Origin of cord in right auricle and its course to the annulus ovalis

Arising from the right auricular wall 1.5 cm. from the annulus ovalis, a tiny, grayish-white, rounded, threadlike, smooth, glistening cord, 0.5 mm. in diameter, ran freely and unattached toward the slightly patent foramen, and, near the lower rim of the annulus ovalis, apparently obliquely pierced the interauricular wall. Attached to the annulus ovalis, near its inferior margin in the left auricular wall, it traversed the left auricle and, following the course of the blood flow, passed down through the mitral orifice well into the left

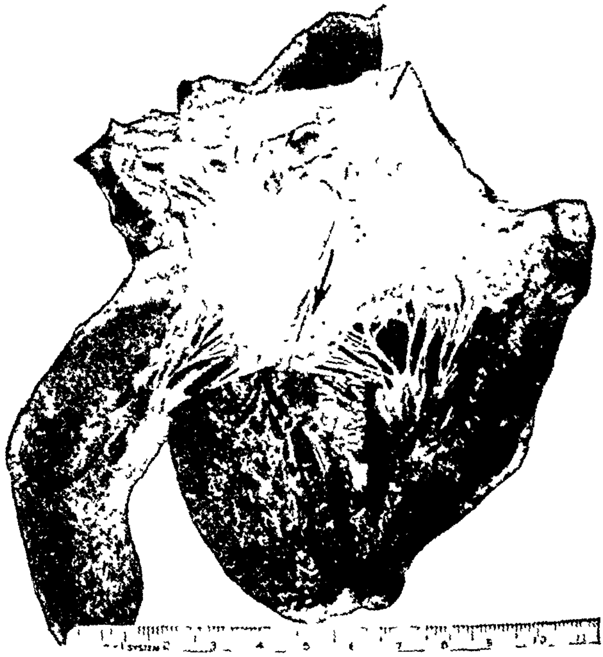

Fig 2 —Course of cord from annulus ovalis through left auricle and mitral orifice into left ventricle The cord is considerably shortened from shrinkage resulting from fixation in formaldehyde.

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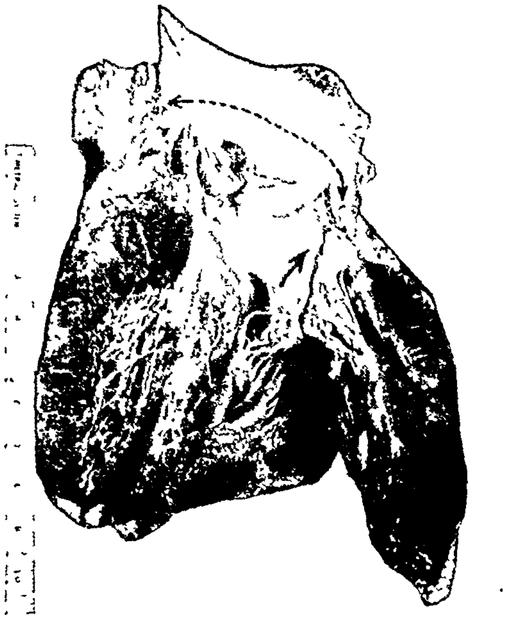
* From the Department of Surgery, University of California Medical School.

† From the Laboratory of Morbid Anatomy of the Philadelphia General Hospital.

ventricle. Here it turned, and, forming a parabola-like curve around the anterior mitral leaflet, but sufficiently below it so as not to interfere greatly with its function, apparently, proceeded toward the aortic valve. As it approached the anterior cusp, it perpendicularly pierced it and attached itself to the wall of the aorta, 8 mm. beyond, thus virtually transfixing this cusp. It was as though a suture had been started in the right auricular wall and had been passed through the course of the fetal circulation, finally ending in the aortic wall, after penetrating the aortic valve. The cord tended to increase in size as it progressed: in its course through the left auricle and ventricle, it increased from 0.6 mm. to 2 mm. in diameter; it was thickest in its curve around the mitral leaflet, reaching a diameter of 2.5 mm. in this section. As it approached the aorta it again became smaller, averaging not more than 0.5 mm. as it pierced the cusp. The entire cord was about 12 cm. long; 1.5 cm. from its origin in the right auricle to the annulus ovalis; 5.5 cm. from the annulus ovalis to the curve in the left ventricle; 4 cm. from the curve to the aortic valve, and 8 mm. from the cusp to the aorta. It was rounded throughout its course, and on palpation was firm and solid, but easily pliable.



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* From the Department of Ophthalmology, Stanford University Medical School.

Retinoscopy of the mother and the children was done under atropine mydriasis. The examination of the fundi in all these cases was negative. Lenses did not improve their visions nor straighten out the eyes.

Examination of the vision of Mrs. C. S. revealed: O. D. = hand movement; O S = 20/30. Retinoscopy: O. D. + 2.00 ⊃ + 2.00 axis 90°; O. S + 2 00 S. There was a right divergent strabismus, the right internal rectus muscle being very weak.

The eldest of the three children was a boy, aged 12 years. The right eye had been turning in since 2 years of age. Vision: O D. = 20/30, O S. = 20/30 part. Retinoscopy: O. U. + 5 00 S. In a postmydriatic test, the patient accepted only O. U. + 0 75 S. There was an alternating convergent strabismus of 30 degrees by the arc test, the left eye being the fixing eye.

The second child was a girl, aged 9 years. The right eye had been turning in since 2 years of age. The right pupil was larger than the left Vision· O. D = 20/200; O S. = 20/40. Retinoscopy: O D. + 4.00 ⊃ + 1.00 axis 135°; O. S. + 4 00 ⊃ + 1 00 axis 45°. Postmydriatic test: O. D. did not accept any lens; O. S accepted + 1 00 S. By the arc test: right convergent strabismus 30°.

The youngest child was a girl, aged 6 years. The left eye had been turning in since 1 year of age. The child was too young for recording vision Retinoscopy: O U. + 5.50 S. By the arc test: left convergent strabismus 30°.

CARDIOSPASM AND CONCOMITANT ESOPHAGEAL DIVERTICULUM

John H. Fitzgibbon, M D., Portland, Ore.

As the occurrence of either cardiospasm or diverticulum of the esophagus is relatively infrequent, the existence of the two conditions in the same individual is rather unusual.

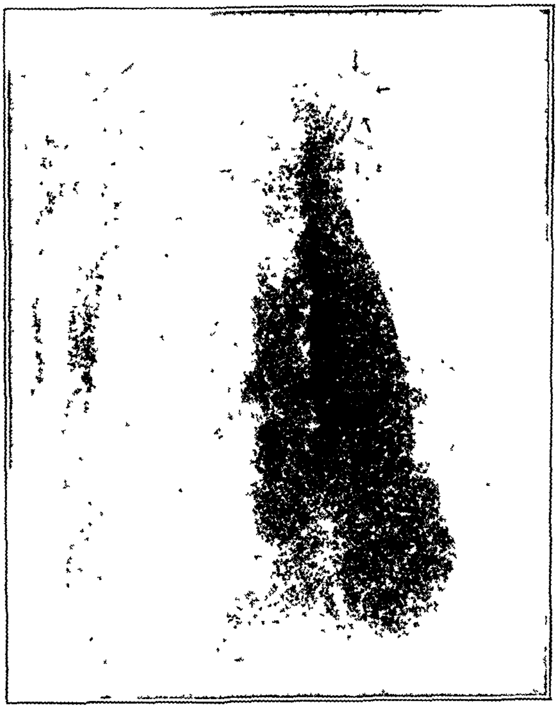

Fig. 1.—Cardiospasm and diverticulum.

Dessecker[1] states that, in eight cases of diverticulum of the lower third of the esophagus, cardiospasm was found in five; and he believes that even when it is absent, a careful history may reveal symptoms of spasm at some time. The accumulation of food in a spot weakened congenitally, or by traction from cicatrices, is thought to be a causative factor. A further contributing factor, he believes, is the negative pressure of air in the thorax as affecting that in the esophagus. Vinson[2] has reported two cases of diverticulum of the middle third of the esophagus associated with cardiospasm.

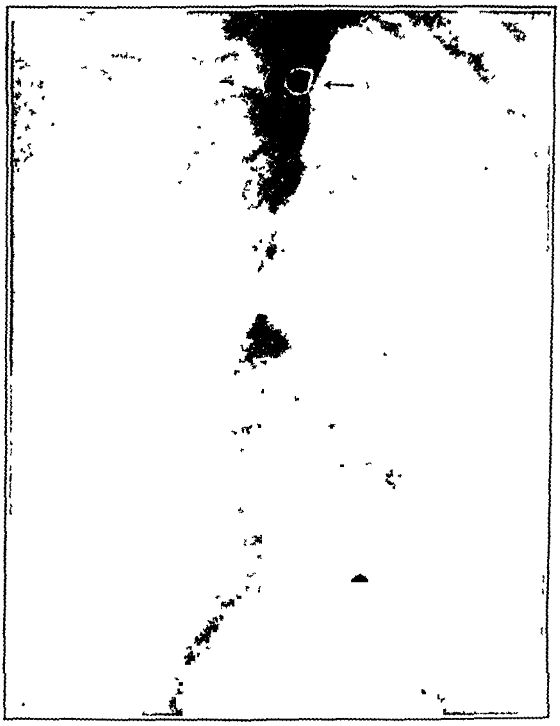

Fig. 2.—Barium residue in diverticulum.

The case here reported presents the very unusual condition of pulsion diverticulum of the upper end of the esophagus with concomitant cardiospasm.

REPORT OF CASE

O. L. C., a man, aged about 40, seen in December, 1924, had had difficulty in swallowing for fourteen years. The location of the obstruction was described as at the lower end of the esophagus. A stomach tube or esophageal bougie could be passed into the stomach with little difficulty, but the patient swallowed cold water with marked effort.

Fluoroscopic examination confirmed the diagnosis of cardiospasm, and, in addition, revealed a small diverticulum of the upper end of the esophagus, which was evidently of the pulsion type. Roentgen-ray films showed the pouch extending beyond the left border of the esophagus (fig. 1). As the esophagus emptied, a residue of barium could be seen remaining in the diverticulum (fig. 2).

All symptoms were referred to the cardiac end of the esophagus, and the diverticulum was apparently not causing difficulty. After the patient had swallowed a silk thread guide, the cardia was dilated with a Sippy air bag dilator. This was followed by marked improvement, and the patient has, so far, not reported for further treatment.

COMMENT

This case is of interest only because of the rarity of the condition, for the diverticulum is apparently too small to cause much difficulty in swallowing. In similar cases found in the literature, the diverticula have been of the middle or lower third of the esophagus.

Stevens Building

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[1] Dessecker: Das epiphrenale Pulsionsdivertikel der Speiserohre, Arch f. klin. Chir. **128**: 236, 1924.

[2] Vinson, P. P.: Cardiospasm Associated with Esophageal Diverticula, New York M. J. **117**: 540, 1923.

A NEW DUODENAL TIP

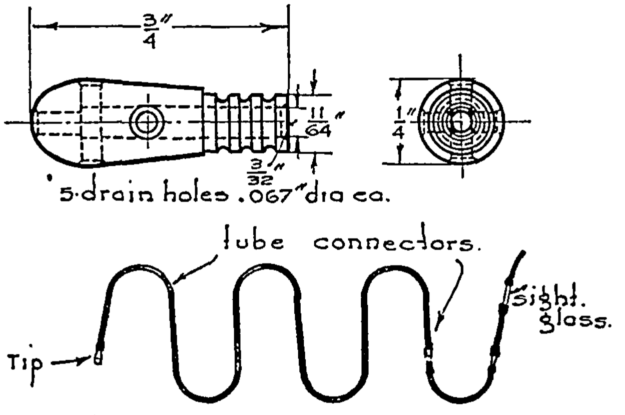
Carl V. Vischer, M.D., Philadelphia

After having used a number of the standard duodenal tubes, such as those of Jutte, Rehfuss, Lyon and Einhorn, with the aid of my brother and associate, Dr. Thomas J. Vischer, I designed a duodenal tip as shown in the accompanying illustration.

The tip is ¾ inch (2 cm.) in length, ¼ inch (0.6 cm.) in diameter, 11/64 inch at the threaded end and the caliber, 3/32 inch. There are five drain holes placed as shown in the illustration, each 0.067 inch in diameter and countersunk. The tip may be used on any standard tube. We have used the tip on both the Jutte and Rehfuss tubes. It weighs exactly 2.75 Gm.; it is made of German silver and is double gold plated.

After having constantly used the tip over a period of time, I have noted the following advantages:

1. The tube is more easily introduced; it is never necessary to use wire.
2. There is less discomfort to the patient in swallowing.
3. More rapid passage into the duodenum is obtained.
4. The tube may be introduced through the nostril.
5. There is better drainage with less obstruction by mucus.
6. Aspiration is made easier when necessary.



Above, side view and cross-section of duodenal tip; below, tip connected with tube.

The Vischer duodenal tip is manufactured by Richard Young, instrument maker, Fifteenth Street, above Race Street, Philadelphia.

5903 Greene Street, Germantown.

A NEW TIP FOR GASTRODUODENAL TUBES

Moses Einhorn, M.D., New York

I delayed the announcement of my new tip for gastroduodenal tubes in order first to convince myself that it possessed decided advantages on the tips already in use. I am now in a position to state that I have used the tip on a number of my private patients and also on patients in the dispensary of Mount Sinai Hospital, and find that it takes from one third to one half less time to enter the duodenum, as compared with other tips used on the same patients.

The tip, shown in the accompanying illustrations, is 27 French in diameter, 10/8 inches in length, of capsule shape, with an obtuse point, and has three divisions: (*a*) the top, made of nickel, through which a large opening is bored, which serves as an outlet for the drainage chamber to the tube which is attached to the neck of the capsule; (*b*) the spiral, made of round metal wire, which connects the top to the body, and by its circular arrangement offers a large drainage area; (*c*) the bottom, made of solid lead, and connected with the top by the spiral, and also by a wire which runs diagonally through the drainage chamber.

The construction of my tip is based on principles which make it ideal in gastroduodenal intubation and drainage, for the following reasons:

1. The swallowing of the tip is accelerated because of its capsular shape and its heavier weight, which is sufficient to permit the passage of the tube through the esophagus with a minimum of discomfort to the patient.

2. The tip maintains its intended course along the stomach pathway because of its weight, which is 170 grains (11 Gm.), and its proper arrangement, its distal end being made of solid lead three times heavier than the upper part, which aids it to travel along the small curvature and keeps it in proper place in its progress toward the pyloric opening.

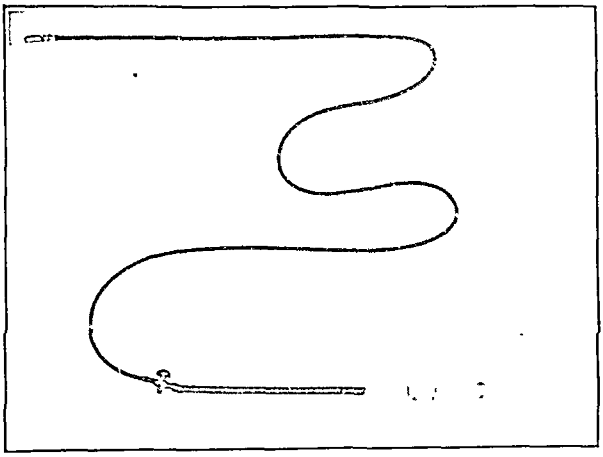


Fig. 1.—Gastroduodenal apparatus with tip in place.

3. The entrance of the tip into the doudenum is accelerated: (*a*) by placing the patient in a reclining position on the right side, with the right leg and knee stretched straight, and the left leg and knee flexed, overlapping the right, thus bringing the duodenum lower than the stomach; (*b*) by injecting a small amount of lukewarm water through the tube, which will relax the pyloric opening and stimulate the peristalsis of the stomach; (*c*) by having the patient swallow the last 7 inches (18 cm.) of the tube slowly, over a period of from ten to fifteen minutes, which assists the progress of the tip along the stomach pathway.

4. The large drainage chamber permits the extraction of pieces of mucus and juice, and also permits a continuous drainage of the tube. This is accomplished by the openings formed by the circular spiral, which promotes drainage from all sides.

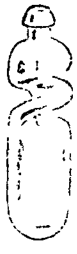
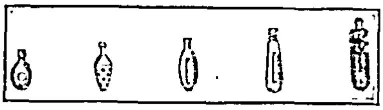


Fig 2.—Appearance of tip.

5. There is minimum injury to the mucous membrane of the stomach and duodenum, either in course of drainage or on withdrawing the tip; this is accomplished by having the spiral made of round metal wire and the upper edge of the bottom of the tip smoothly beveled.

Comparison of Tip with Others Now in Use



Length, inches	6/8	7/8	8/8	9/8	10/8
Weight, grains	104	59	83	72	170
Diameter, French	34	23	29	27	27

The tube should be of semisoft quality, to lessen the possibility of knotting and bending.

The tube is 12 French in diameter, semisoft in quality, and 50 inches (127 cm.) in length. It is divided by heavy lines, one line being placed 20 inches (50 cm.) from the tip; two lines, 27 inches (70 cm.) from the tip; and three lines, 34 inches (85 cm.) from the tip. At the end of the tube, I introduced a rubber stopcock, which is very useful, particularly after the injection of magnesium sulphate used in the course of drainage, as it does not permit of dripping, and also in fractional methods for gastric contents.

Important points to remember during the intubation are:

1. The tube should never be introduced farther than the first heavy line, which is 20 inches from the tip, before placing the patient on the right side.
2. After the drainage is completed and one is ready to remove the tube, the first seven inches should be withdrawn while the patient is still in a recumbent position; only then should the patient be placed in an upright position, while the rest of the tube is being withdrawn.

286 West Eighty-Sixth Street.

EMBRYONIC MIXED TUMOR OF THYROID *

J. Warren Bell, M D, Ph D, Everett, Wash.

Mrs. H presented herself for examination believing she was pregnant. Examination revealed a distended abdomen, in which no fetus could be palpated Catheterization of the bladder secured a few ounces of normal urine The roentgen ray revealed an hydramnios with outlines of a fetal skull visible The skull did not appear as large as a full term fetus, though the abdomen was as large as is usual at term. The patient was put to bed and the hydramnios diminished slightly, but in spite of rest and sedatives she went into labor prematurely, with a discharge of considerable amniotic fluid.

I arrived just in time to assist in extracting by the feet the fetus shown in the accompanying illustration. The child breathed spasmodically a few times and then stopped The mother had a prolonged convalescence, owing to the assumption of household duties before she was strong enough for this responsibility

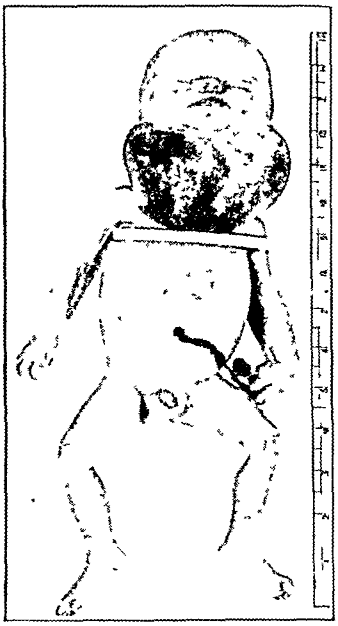


Fig 1 —Appearance of fetus, showing tumor of thyroid

A roentgenogram of the specimen showed no evidence of bone formation in the tumor.

Dissection of the abdomen and thorax showed the viscera in normal position and of normal appearance. The tumor was so large that we considered several sources of origin, but the anatomic relations proved by dissection that it was from the thyroid alone The tumor was quite firm, slightly elastic and heterogeneous in appearance on section On microscopic section the tissue would not be identified as thyroid on casual observation. The various sections differed from one another.

The first microscopic section showed a definite piece of cartilage The second microscopic section showed a tubular area, while the third section showed embryonic tissue.

DIFFERENTIAL DIAGNOSIS

When we refer to the literature we find that Hertzler[1] includes under tumors of the thyroid the following:

1. Adenoma: (*a*) fetal; (*b*) tubular.
2. Thyroid cysts.
3. Carcinoma.
4. Sarcoma: all cell types.
5. Rare tumors: (*a*) fibromas; (*b*) lipomas.

Scudder[2] pictures a series of tumors which bear some resemblance to the gross appearance of the tumor in our case. They are lymphangiosarcoma (unilateral aspect), periosteal osteosarcoma of lower jaw (unilateral), large fibroma, osteofibroma, dentigerous cyst, adamantine epithelioma, and carcinoma.

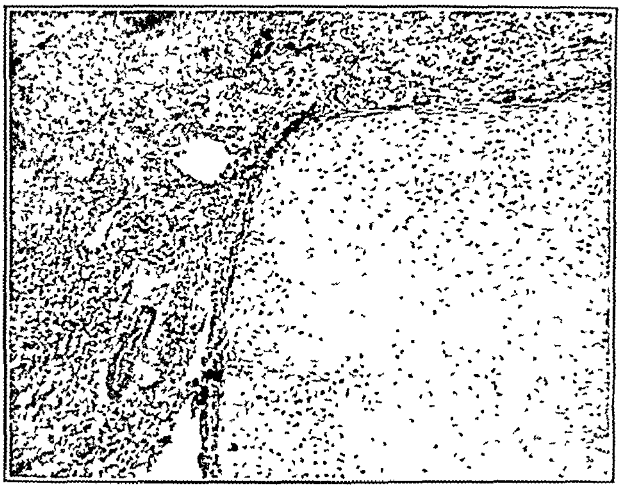


Fig 2 —Microscopic section showing area of cartilage.

Gaylord and Marsh,[3] in their work with salmonoid fishes, picture massive tumors in trout, of gross appearance similar to our tumor. The microscopic appearance of such tumors shows considerable variation.

Gardner[4] gives us a picture of a teratoma (always congenital) of the thyroid and also of a multiple cystic lymphangioma (usually congenital).

In our case, exact diagnosis is impossible except by careful microscopic examination, since the roentgen ray revealed no bony elements in the tumor Because of the size of the growth and the feebleness of the child, this tumor could not have been successfully removed.

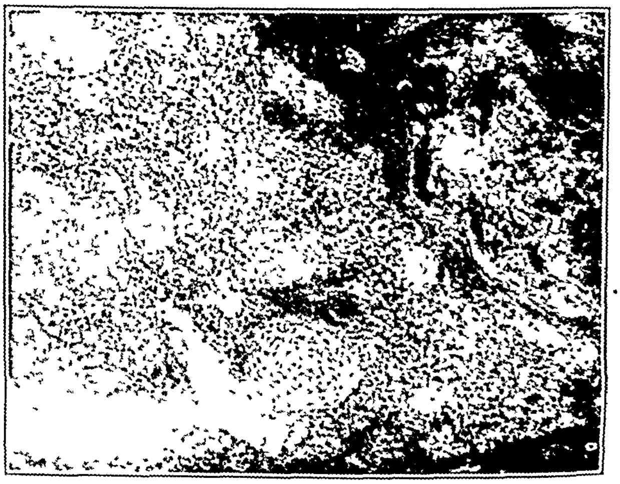


Fig 3 —Microscopic section showing embryonic tissue

Medical and Dental Building.

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* From St Mary's Hospital, Minneapolis

[1] Hertzler, A E A Treatise on Tumors, 1912, p 380

[2] Scudder, C L. Tumors of the Jaw, 1912, pp 69, 123, 140, 141, 155 188, 189, 275

[3] Gaylord, H R, and Marsh, M C: Carcinoma of the Thyroid in Salmonoid Fishes, 1914, figures 27, 38 48, 49, 62

[4] Gardner, R. E. Iconograms, 1913

Special Articles

RELIGIOUS HEALING

PRELIMINARY REPORT

ALICE E. PAULSEN, Ph.D.
NEW YORK

(Continued from page 1524)

SCIENTIFIC CHRISTIANITY

Christianity to some is distinctly a healing movement. Applied Christianity, they believe, is capable of removing every difficulty in the world. Especially is it applicable to physical disease. Christ preached faith, and those who apply the Gospel teachings to the healing of the body lay stress on this mental state. They have developed systems by which the patient's mind becomes imbued with the idea that by communion with God he may be healed, and also teach methods by which this communion may be effected. The material used to develop these ideas is taken from the Scriptures and from the writings of various New Thought authors. The system usually consists of daily reading along these lines, meditation on certain appropriate thoughts, relaxation and affirmative prayer. Treatment consists of relaxation, reading or listening to an appropriate passage of Scripture, affirmation or silent prayer.

The most highly organized movement of this nature is Unity, Scientific Christianity. Kansas City is the headquarters for this movement. It publishes a magazine called *Unity*, which has a circulation of about 185,000. This contains news of interest to the various centers, which are established throughout the country in the form of prayer groups, discussions of the teachings of the gospels as interpreted by the leaders of the movement, testimonials of results obtained by various members through the application of their principles, and other matter. Lecturers are sent out from headquarters to organize guilds in communities, and a prayer service is maintained at the larger centers. It is said that through its literature, lecturers, guilds, practitioners and prayer service the Unity Society reaches from three to five million people yearly.

The following testimonials, quoted from recent issues of *Unity*, indicate the type of response to the prayer service provided at the Kansas City headquarters:

HEALTH

Peoria, Ill.—I am thankful to you for the healing of my son. His arm was suddenly and completely healed. He did not know that I had written to you for help.—Mrs. W. C. H.

Cleveland, Ohio.—I wrote you asking that I might be healed of diabetes and gallstones. I am thankful to say that I have been healed.—Mrs. M. B.

Lorraine, Kan.—Our daughter has had an operation and the doctors said that she could not live. I asked Jesus to heal her, and I sent a telegram to *Unity*. She began to improve immediately. The doctor said that her recovery was a miracle. I thank God that she is alive and well today.—Mrs. W. E. B.

PROSPERITY

Kansas City, Mo.—I wrote you asking for prayers to assist me in renting vacant apartments. Each day I faithfully held the thought that you sent me and all the apartments now are filled.—A. L. M.

East Orange, N. J.—I have made a business connection which has promise far beyond any hopes that I entertained when I wrote you for prayers. May God bless you in your wonderful work.—C. F. B.

New York.—Wonderful things have happened since I wrote to you. I was then out of work. Now I am in my old position, and have had a raise in salary.—M. T.

MISCELLANEOUS

Hot Springs, Ark.—Find enclosed $50, my tithe. Your literature has helped me more than I can possibly express. There was a dreadful hailstorm here and my car happened to be sitting out in the front yard. Lumps of ice larger than a hen's egg fell thick and fast. I placed everything of mine in the Lord's hands. None of my property was damaged, while all around there were battered roofs, broken windows and damaged cars. I did not forget to thank God for his protection.—Mrs. A. W. C.

Tithing is the method of reimbursement used. In a booklet published by the Unity Society entitled "Tithing," an interesting history of this method is given from the time of its appearance in the Mosaic law. From the earliest times it has been the custom for those who observe tithing to give 10 per cent of their possessions to the Lord, and it is a matter of common belief that those who do this will prosper.

The eastern representative of the Unity Society is Mr. Richard Lynch. Mr. Lynch was himself an invalid for the greater part of his life until he discovered how to heal through applying the methods which he now teaches. He talks to large audiences almost daily. The topics of his lectures include such subjects as health, happiness, prosperity, character formation and personality. Mr. Lynch also carries on some private practice in healing, and conducts services attended by an enthusiastic following on Sunday mornings. At the registered class lectures, Mr. Lynch's audience usually numbers from 300 to 500 people. He started in New York with only six people, three years ago. There are ten registered practitioners connected with the New York headquarters, and an emergency prayer service is also maintained there. Followers of this school, after a short experience with the success of its methods, prefer them to those of medicine, and voluntarily dispense with the latter in order to strengthen their faith. But Unity practitioners, like all New Thought practitioners, do not demand that they do so, and do not withdraw their services if the patient wishes to consult a physician as well.

VARIOUS OTHER SIMILAR MOVEMENTS

New Thought and Christian Science are types of the same idea expressed in somewhat different ways, though by methods fundamentally similar, however different they may be in detail. Christian Science represents what is known as an "absolute" system, while most New Thought movements represent a comparatively "relative" system. There appear to be innumerable other systems more or less like the one or the other in that they are more "relative" or "absolute" in nature. They differ in their method of treatment, some treating "silently," some "audibly," some making their appeal through excitation, others through relaxation.

One of the most extensive movements using excitation and audible treatment is the Rawson school, founded by the late F. S. Rawson in 1919. His work is being carried on by more than a hundred practitioners in this country, who treat for success, happiness and health by a system consisting of vehement negation of the undesirable and affirmation of the desired. By attuning his mind in this way, the individual is enabled to "manifest" and to "demonstrate." It is said by Rawson followers to be the highest system of thought, and they are enthusiastic in their declarations as to its practicability.

In the philosophy of Burnell, we have a system of absolute thought. The follower of this system of philosophy and thought meditates on such axioms as these:

> I know that I am because I cannot say I am not. Therefore Being or Is-ness, or Consciousness, or Self, must be Truth.
>
> Truth is that which Is, and as there cannot be that which is not, therefore that which is, or Truth, must be all there is.

The individual becomes conscious of truth, perfection, cosmic consciousness. His mind, comprehending perfection, reflects perfection; and, even as his mind, his body becomes perfect.

SPIRITUALISTS

The spiritualist movement has a firm hold in New York. There are said to be many smaller circles which meet in private homes and there are at least twenty comparatively well organized societies whose services are advertised in the Sunday newspapers as open to the public. Attendance appears to vary from about fifteen to 100 people, depending on circumstances. Healing is frequently a part of the services, and some of the church "pastors" give private consultations.

It is believed that sickness is due to demoniacal possession, and the purpose of the healing service is to drive out the evil spirit. This can be accomplished in various ways.

The individual himself may so conduct his life that the evil spirit will of its own accord depart, since all evil spirits succumb when faced in the name of Christ. Or a group of individuals, gathered to worship the greatest spirit, God, may thus invite beneficent spirits, who will overcome the evil spirit and cause him to depart.

Another method consists in availing oneself of the services of a medium, who, being guided by the spirits of certain departed ones who were authorities on this earth, goes into a trance during which he or she lends his or her body to these spirits that they may speak to the patient and advise him what to do.

Still another method is that used by Titus Bull, M.D., a colleague of the late Professor Hyslop, who believes that it is possible to demonstrate that certain types of insanity are due to the presence of evil spirits. Dr. Bull is using a medium in his practice. His method is to transfer the evil spirit from the patient to the medium and to educate it by persuasion. This is accomplished through long conversations, sometimes taking the form of serious debates. The doctor is guided in his work by the spirits of a group of famous scientists. He is thoroughly convinced that exorcising a demon results only in passing it on, and has therefore followed the educational method in his practice, for by educating the evil spirit his influence for evil may be overcome once and for all.

Exorcising is a more common method. I witnessed a series of healing services at a certain negro church in which this method was used amid considerable emotional demonstration. It consists of performing certain mesmeric passes in order to gain control over the spirit, and then commanding it to depart.

It is considered necessary for those who would be successful healers to live lives of great self denial and saintliness in order that they may command evil spirits and that these spirits may have no power over them. The patient also must take heed to his morals in order that he may be completely cured and remain well. He must make himself an unsuitable host for an evil spirit.

If a person is sufficiently saintly, it is believed that evil spirits vanish at his approach, and he may effect instantaneous cures in some cases by merely touching the sufferer. Dr. Bull states that he is forced to make all sorts of sacrifices in order to maintain his power. He also states that he is able to cure certain conditions by placing his hands on the patient. However, he is using the medium and taking notes on the exact details of the procedure in most instances in order to perfect the method for the use of others who may wish to use it and to obtain recorded data on which he hopes to base proof of his contentions.

THEOSOPHY

Certain forms of Theosophy include healing in their services. The method may be that of the spiritualists or it may make use of telepathy. In the latter case, it is believed that the patient is helped by the concentration of the thought of all those present. Each attempts to realize health for him. The patient himself assumes a rather passive attitude and believes himself to be the recipient of power thus directed to him.

Neither Theosophy nor Spiritualism, however, deals with health primarily, nor are these societies definitely organized in any way for that express purpose. Nevertheless, many of their members believe that they are benefited through such healing services, and seek such help from their leader or fellow members when they are ill. Compensation is on the basis of free will offering as a rule, although among the spiritualists there is a minimum charge of fifty cents in some cases.

This completes the discussion of organized movements independent of the church. There is yet to be considered the work of certain scattered individuals who are applying religion to the readjustment of unfortunates of one type or another who come to them for help. Some of these are individuals who believe that they have themselves been cured through faith. Many of them state that they were invalids or maladjusted in some way until religion became a unifying influence in their lives. Some have long medical histories, and not a few were definitely given up as incurable by their physicians.

By chance or through the influence of another they have succeeded in curing themselves. Their system consists of close study of the teachings of Jesus, an attempt to realize completely the import of his message, and an effort to live a truly Christian life, with all that it implies. With this realization comes a certain release from strain and a willingness to cast one's burdens on Jesus. Earnest prayer enters into the treatment of self or of others. Service for others, with its attendant joys, comes as a natural consequence of the deeper realization of truth. Prayer or relaxation accompanied by dwelling on certain ideas that tend to deepen the patient's faith and expectancy of relief act as "spiritual anesthetics." Under its influence, pain and other symptoms are said to disappear.

Another type of individual work is that carried on by the Rev. Thomas Calvert.[9] Formerly a clergyman in a parish near Albany, he has for the last fifteen years been carrying on a church mission of healing in New York. Mr. Calvert places great faith in what he terms psychanalysis, in which he says he has instructed himself since its first appearance and he uses it regularly to uncover his patients' "complexes." By persuasion and suggestion he then proceeds to reeducate the individual, using religion as a basis for the readjustment. When medical attention is required the patient is referred to a physician. Mr. Calvert is entirely willing to work with physicians, and states that his work is not in any way designed to take the place of medical attention when this is needed. The mission is supported by donations and by the fees from patients. Originally, the plan of free will offering was followed. It is still followed if the patient is not able to meet the fixed charge; but since a less systematic method of meeting expenses was found to threaten the support of the work, a definite price of $5 for forty-five minutes, $10 for ninety minutes and $15 for 120 minutes has been set. Mr. Calvert alone carries on the treatment and devotes his entire time to the work. He has many testimonials to the success of his endeavors.

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[9] Mr. Calvert died in April, 1926.

Still another method is that pursued by John D. Quackenbos, M.D., fellow of the Academy of Medicine and professor emeritus of Columbia University. He states that he has treated in the course of his practice more than 20,000 cases of addiction to alcohol, tobacco or drugs. The method pursued by Dr. Quackenbos is to induce a subjective mental state through the administration of certain drugs, including trional, passion flower and bromide. While the patient is in that state he suggests the elimination of the pernicious habit. Dr. Quackenbos feels that when the patient is in the particular state which his medication induces, the operator has direct access to what may be the spirit, or some mental mechanism which is peculiarly susceptible to religious suggestion. He is brought to this conclusion because of the nature of the rapport established, the ready response on the part of the patient to influence for good, and the tendency to definite rejection of evil suggestions. For this reason he uses Biblical and other religious material in the suggestions which he introduces into the mind during his treatments. As a rule, these consume two hours.

Although he confines his practice mainly to the treatment of pernicious habits, he has also treated other conditions, and in cases of paralysis of one sort or another, for instance, where medicine is of little avail, he has witnessed, he believes, a marked improvement in control, securing in one treatment what it would ordinarily take weeks of reeducation in the waking state to accomplish. So potent, says Dr. Quackenbos, is an idea introduced into the mind while in this condition, that even the effects of the comparatively large doses of the drugs appear to be entirely removed by posthypnotic suggestion, and the patient experiences no difficulty in going about his regular pursuits as soon as he is brought back to consciousness.

Similar to the work of Dr. Quackenbos, but different in that the state of lowered psychologic tension may not be as profound and is brought about without drugs, is the work of certain other individuals outside the medical profession who, like the New Thought teachers, usually give public lectures, which they follow up with private courses and individual treatments. These individuals usually call themselves Practical Psychologists, or Teachers of Metaphysical Healing.

SPECIAL APPLICATIONS OF RELIGION

Included in the testimony is the work of institutions where religion is made an essential element in the reconstruction of the lives of certain individuals.

The late William Gould, who founded Gould Farm, is said to have based his entire system on the healing power of religion. Mr. Gould believed that there is a definite technic by which the spirit may be developed, and with its development physical healing follows as a natural consequence. Religious discussions, prayer and service for others enter essentially into the routine at Gould Farm. Since Mr. Gould's death, his co-workers feel that there has been a deepening of the spiritual life among them which has enabled them to carry on successfully in spite of Mr. Gould's physical absence.

Deaconess Young reports that her work with wayward girls is made possible by the influence of deep religious conviction in her own life, and uses religion as a stabilizing influence in the readjustment of those who come under her care.

The Salvation Army and other rescue societies provide testimony as to the influence of religion in the conversion of all sorts of derelicts, including the alcoholic and the drug addict.

OTHER ASPECTS OF THE SITUATION

Besides teachers and practitioners concerned in the organized movements and the individual work referred to in the preceding sections, there are many others in the field, who reach the public through magazines and books, correspondence courses, phonograph records and even radio talks.

Though we have made only a very cursory survey of the magazine field, our collection includes some twenty-five or thirty magazines with such titles as "Now," "Truth," "Leaves of Healing," etc. Brentano recently had a special display of books on this subject containing works by a hundred or more authors.

One need but consult the advertisements in the Sunday newspapers to gather some idea of the activity going on every day. There are sometimes as many as twenty or twenty-five healing services or lectures on religious healing advertised among the notices of religious services in any one of the Saturday or Sunday issues of the newspapers. Advertisements in such publications as the *Psychology Magazine* shed further light on the extent and variety of the work.

In an attempt to obtain material in the way of advertisement, dodgers, advertising lectures, etc., I have collected enough to fill more than three large scrapbooks of fifty pages each, and this material merely begins to cover the field.

MODERN MOVEMENTS WITHIN THE CHURCH

Jesus made healing a definite part of his ministry,[10] and in the Christian Church healing has been carried on more or less throughout its history. However, the attempt to introduce healing systems as a fundamental part of the Christian ministry is a comparatively recent development. There is now, however, a keen interest in this field and it is rapidly gaining ground. Especially in the Episcopal Church do we find a systematized effort to develop this work.

EPISCOPAL CHURCH

Emmanuel Movement.—The Emmanuel movement was established in the Emmanuel Church of Boston some twenty years ago by Rev. Dr. Elwood Worcester and Rev. Dr. Samuel McComb. Neither had had medical training, but both were thoroughly grounded in psychology. The Emmanuel Church is still carrying on the work, and at one time it had associated with it men of high standing in the medical profession. Dr. Richard Cabot especially appears to have been interested in this work. When Mr. Worcester and Mr. McComb started their work, it was with a desire to do something for the physical relief as well as for the moral uplift of needy people who came within their reach. The work started with a tuberculosis class in which instruction was given to sufferers from that disease who lived in the tenements and who were unable to go away for treatment. They were given general health information and instruction on methods designed to help their condition and to prevent the spread of the disease to others.

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[10] Tabulation of the miracles of Jesus is given by Witherill, F. M.: Healing in the Churches, New York, Fleming H. Revell Company, 1925, p. 36.

The scope of the work was broadened by the addition of an "Emmanuel health class," in which treatment by suggestion was a feature. No person was admitted to the class without competent diagnosis of the case by a regular physician indicating that there was no organic disease demanding medical or surgical treatment and that the case was one amenable to treatment by psychic methods. Morning and evening clinics were held, and a weekly meeting. The daily treatments were given in the church. At the weekly meetings, the service consisted of Scripture reading, prayer and a short address. Topics such as worry, anger, habit, suggestion, insomnia, nervousness, peace in the home, what the will can do, and what prayer can do were discussed. The work of the Emmanuel clinic is now largely confined to drug and alcohol addicts. Medical supervision is not now as well provided for as formerly.

Dr. Richard Cabot made a study of 178 cases treated at the Emmanuel clinic and reports as follows: In eighty-two cases of neurasthenia, seventeen patients were much improved, sixteen slightly improved, seventeen not at all improved, and in twenty results were not reported. Of twenty-two alcoholic addicts, eight were much improved. In other cases of fears, fixed ideas, obsessions and hysteria, about one fourth of the patients showed real improvement. There was also an encouraging success in the treatment of those addicted to the use of drugs, morphine, cocaine and the like. Sad, discouraged, in some cases suicidal patients were helped and put in the way of living honorable and useful lives.

Nazarene Movement.—This movement was established by Rev. Henry Blauvelt Wilson of Boonton, N. J., in 1909. Mr. Wilson had formerly been priest in charge of Holy Cross Mission in the Ridgwood section of Brooklyn. In the course of his work he was frequently called on to comfort his parishioners and others in the hospital and in their homes when they were sick. He seemed to be particularly successful in accomplishing this and he felt that the Gospel message which he brought to them played an important rôle in the recovery of those whom he visited during their illnesses. On account of ill health on his own part he was forced to give up his work in the city and retire to a smaller parish out of town This he did and shortly afterward he established the Society of the Nazarene on the following principles:

> The Society of the Nazarene, founded on the belief in our Lord's continued interest in the health of the body as well as the salvation of the soul: requirements for membership.
>
> 1. Belief in the divinity of Jesus Christ.
> 2. Belief in the possibility of following his precepts.
> 3. Belief in his works of healing and in the perpetuation of their power among believers by the use of the sacred name "Jesus of Nazareth."

The original membership was seven persons, all directly connected with Mr. Wilson's family. Mr. Wilson has since died and the work is being carried on by Rev. A. J. Gaynor Banks, with headquarters at the House of the Nazarene, Mountain Lakes, N. J. Membership in the society now numbers about 7,000. Its official organ, the *Healing Evangel,* has a circulation of about 6,000. At the Mountain Lakes headquarters is a "guest house where approved cases are received for special care and treatment under spiritual and medical supervision,[11] a chapel where daily services are held for intercession and healing, and a training school where leaders may receive proper instruction in the work of healing, develop such gifts as they may have, and receive spiritual instruction and encouragement."

Healing is accomplished through establishing faith that Christ still heals as he did when he was on earth, and that if his help is sought in the right way it will be given. Certain healers are said to be endowed with a "gift" of healing. Some are born with it; others report having become aware of being in possession of it after some such experience as the disciples had on the day of Pentecost, after which their spiritual powers were markedly increased. Mr. Banks does not feel that he has been endowed with this gift of healing, but that he secures his results through the faith which he establishes in his patients. He believes that this state of consciousness results either in the removal of inhibitions to the natural healing forces or the stimulation of those forces, or that the body is thus conditioned to receive added strength from an infinite source. In individual cases he establishes faith through persuasion in personal conferences with the patient, teaching from those parts of the Gospel which deal with healing, and heterosuggestion with Biblical material and affirmative prayer. He has also worked up a quantity of religious material for the patient to use after the method advised by Coué; that is, by systematic autosuggestion before going to sleep, immediately on waking, and at intervals during the day.

The activities of the director of the Nazarene movement include missions, individual treatments and intercessory prayer. A prayer service for others is held daily for those who ask for prayer to help them in any difficulty. The director includes in his prayers the names of all those who have communicated their need to him in person or by letter, telegraph or other means.

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some twenty years ago by Rev. Dr. Elwood Worcester and Rev. Dr. Samuel McComb. Neither had had medical training, but both were thoroughly grounded in psychology. The Emmanuel Church is still carrying on the work, and at one time it had associated with it men of high standing in the medical profession. Dr. Richard Cabot especially appears to have been interested in this work. When Mr. Worcester and Mr. McComb started their work, it was with a desire to do something for the physical relief as well as for the moral uplift of needy people who came within their reach. The work started with a tuberculosis class in which instruction was given to sufferers from that disease who lived in the tenements and who were unable to go away for treatment. They were given general health information and instruction on methods designed to help their condition and to prevent the spread of the disease to others.

The scope of the work was broadened by the addition of an "Emmanuel health class," in which treatment by suggestion was a feature. No person was admitted to the class without competent diagnosis of the case by a regular physician indicating that there was no organic disease demanding medical or surgical treatment and that the case was one amenable to treatment by psychic methods. Morning and evening clinics were held, and a weekly meeting. The daily treatments were given in the church. At the weekly meetings, the service consisted of Scripture reading, prayer and a short address. Topics such as worry, anger, habit, suggestion, insomnia, nervousness, peace in the home, what the will can do, and what prayer can do were discussed. The work of the Emmanuel clinic is now largely confined to drug and alcohol addicts. Medical supervision is not now as well provided for as formerly.

Dr. Richard Cabot made a study of 178 cases treated at the Emmanuel clinic and reports as follows: In eighty-two cases of neurasthenia, seventeen patients were much improved, sixteen slightly improved, seventeen not at all improved, and in twenty results were not reported. Of twenty-two alcoholic addicts, eight were much improved. In other cases of fears, fixed ideas, obsessions and hysteria, about one fourth of the patients showed real improvement. There was also an encouraging success in the treatment of those addicted to the use of drugs, morphine, cocaine and the like. Sad, discouraged, in some cases suicidal patients were helped and put in the way of living honorable and useful lives.

Nazarene Movement.—This movement was established by Rev. Henry Blauvelt Wilson of Boonton, N. J., in 1909. Mr. Wilson had formerly been priest in charge of Holy Cross Mission in the Ridgwood section of Brooklyn. In the course of his work he was frequently called on to comfort his parishioners and others in the hospital and in their homes when they were sick. He seemed to be particularly successful in accomplishing this and he felt that the Gospel message which he brought to them played an important rôle in the recovery of those whom he visited during their illnesses. On account of ill health on his own part he was forced to give up his work in the city and retire to a smaller parish out of town This he did and shortly afterward he established the Society of the Nazarene on the following principles:

> The Society of the Nazarene, founded on the belief in our Lord's continued interest in the health of the body as well as the salvation of the soul: requirements for membership.
>
> 1. Belief in the divinity of Jesus Christ.
> 2. Belief in the possibility of following his precepts.
> 3. Belief in his works of healing and in the perpetuation of their power among believers by the use of the sacred name "Jesus of Nazareth."

The original membership was seven persons, all directly connected with Mr. Wilson's family. Mr. Wilson has since died and the work is being carried on by Rev. A. J. Gaynor Banks, with headquarters at the House of the Nazarene, Mountain Lakes, N. J. Membership in the society now numbers about 7,000. Its official organ, the *Healing Evangel,* has a circulation of about 6,000. At the Mountain Lakes headquarters is a "guest house where approved cases are received for special care and treatment under spiritual and medical supervision,[11] a chapel where daily services are held for intercession and healing, and a training school where leaders may receive proper instruction in the work of healing, develop such gifts as they may have, and receive spiritual instruction and encouragement."

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The physician had said that the crisis might come any time within the next twenty-four hours, and that while he hoped for the best the balance might turn this way or that and no one could tell which way it would be. Everything depended now on his courage and his fighting spirit.

When I was shown to the patient's room I found him very weak and only partly conscious; at least, so it seemed; but I found out from him later that he was conscious but so weak that he could not give evidence of it. I sat on the bed beside him and gently stroked his forehead. He was restless, so I began to meditate aloud somewhat as follows:

"God says, 'Be still and know that I am God.' Look at me and when I tell you to close your eyes they will close and a feeling of comfort and ease and peace will come about them. To be still means to relax. Now the muscles about your eyes relax and your eyelids close and already there is a feeling of ease and comfort and peace around your eyes.

"That feeling of ease and comfort and peace and well being is going to spread all over the body. Now the muscles of your face and neck relax and your head sinks easily and comfortably on the pillow."

Here I passed my hands over his chest, gently touching him as I continued: "Now the muscles about the chest relax and there is a feeling of ease and comfort and well being all about your chest and around your back.

"There is such ease that you are not conscious of any effort in breathing. [The patient had been breathing with some difficulty when I arrived, but this gradually subsided.] The air is all about you and gently enters your lungs so smoothly and peacefully that it is now a pleasure to breathe.

"God speaks to your mind and says, 'Be still, mind, and know that I am God.' So now your mind relaxes and is still. [illegible]lax means to let go. Your mind lets go of the past. [illegible]bts or fears that might in any wise interfere with the [illegible]g of your body now depart. Your mind is still. It [illegible]o of them and they are gone. Anything that you have heard or thought about your condition that might interfere with your peace or health likewise departs. There is nothing in the past to worry you. On the contrary, out of the past come only words of cheer and confidence, absolute confidence."

Continuing the treatment, I said: "Now your mind lets go of any thought about the future that might in any wise interfere with your well being. There is nothing to fear in the future, for it stretches out before you like a pleasant way and you pass through it confidently, easily and securely. Your mind is now entirely relaxed. It makes no effort. Without any effort you are going to hear and to understand everything I say and no other sound will disturb you.

"God speaks now to the very soul of you, and says, 'Be still and know.' The Scripture says we are partakers of the divine nature. We partake of the life of God. God is the infinite life in all the world. He shares that life with you. God's life is immortal and you are immortal because you partake of the immortal life of God.

"God is the infinite power in all the world. You partake of that power. Deep within you, beneath body and mind, is the life which comes from God. It brings with it the power of God. You partake of his strength. Now the divine power manifests itself in the depths of your nature. It communicates itself to your heart, and your heart beats easily, smoothly, regularly and irresistibly. Your heart feels such power that it knows that nothing can stop it, for the power of God manifests itself there.

"God is infinite vitality. You partake of that divine vitality. God shares it with you. It communicates itself to your heart, and your heart beats with its power. The divine vitality communicates itself to your blood. And now as the blood flows through your body the divine vitality is manifested in every cell and tissue and organ of your body. It takes away all feeling of congestion. It manifests itself in and through your lungs, relieving and strengthening. Every cell and tissue is now cons[illegible] of power an[illegible]ity and health and well being from [illegible] source the infinite source of all courage. Your heart beats courageously. The blood flows along, bringing the message of courage to every cell and organ. Gladly they receive it. Courageously they do their work eliminating and upbuilding. You are surrounded by courage as by the air you breathe, for in the divine courage, in God, we live and move and have our being.

"Even while you sleep you will be breathing in, as it were, life, power, vitality, courage, health and strength and peace. When you awake you will be quite renewed." I then laid my hands on his head and chest, repeating the words of the Scripture, "They that believe shall lay hands on the sick and they shall be healed," and the following prayers: "Almighty Father, according to thy word we lay hands on this, thy servant. May he even at this time be conscious of thy power manifesting itself to the healing of his body, mind, and soul. 'Now unto Him that is able to do exceeding abundantly above that we can ask or think, according to the power that worketh within us, unto him be glory in the church by Christ Jesus throughout all ages, world without end. Amen.'" [Ephesians 3:21.]

The next day I was informed that after I left the sick man he had his first real rest in some days. I continued to treat him daily for about a week, and in due time he was quite restored to health. Toward the end of the time I treated him, he said, "I have a wonderful physician, but I know who saved my life. When you first came to me I felt that I was gradually slipping away. I was too weak and tired to resist. But as you treated me I experienced what you were describing. You brought just what I needed and at the time when I needed it most."

Mr. Walsh places great emphasis on the establishment of expectancy on the part of the patient, and belief that the "healer" can help him. He makes a plea for establishing faith which is based on truth rather than making a practice of taking advantage of imperfect beliefs for temporary gain in the form of curing disease. The ultimate aim of spiritual healing, he says, "includes teaching the patient the whole truth as far as we understand it and he can receive it." He also makes a plea for common sense and the use of medicine so far as this is called for in every case.

Personal treatment with physical healing is a secondary matter. Certain clergymen who have not taken up religious healing as an end in itself report cases from their experience in carrying out the pastoral duties of their office, which would bear witness to the therapeutic value of faith. Professor Batten of General Theological Seminary, who now gives instruction in religious therapeutics at that institution, has had a varied experience along these lines. In the course of his ministry it was not unusual for people who were seriously ill or who had been given up by their physicians to come to him and ask for spiritual help in their distress. Through the calming influence of the religious faith which he was able to build up in them, patients were frequently restored to confidence and enabled to make the most of their remaining days, if not helped to unexpected recovery.

Professor Batten places more confidence in an individual approach, depending on the nature of each particular problem, than on more wholesale methods and regards physical restoration secondary to the establishment of spiritual health with its stabilizing influence. This view is held by many who fear that placing emphasis on physical healing will have a deleterious effect on religion.

Body and Soul Clinic.—This clinic was started by Dr times a week. Certain patients receive additional treatments on nonclinic days at the Park Avenue Hospital, where Dr. Cowles also sees private patients. The work in this clinic is carried on by Dr. Cowles as chief and examining physician, a clergyman and several volunteer assistants, some of whom are previous patients. The doctor talks with each patient and makes such limited physical examinations as the clinic facilities and time permit. Certain laboratory tests are done at a private laboratory to assist in the diagnosis and plan of treatment. When more careful examination is called for by the nature of the case, the director states, patients are referred to other clinics where such examinations may be made.

Treatment at the clinic consists of suggestion administered individually by Dr. Cowles, followed by religious suggestion administered in groups by the clergyman. Immediately preceding the treatment, patients are given a sedative. As he administers suggestion, the doctor presses the closed eyes of the patient, using the fingers of one hand, and with his other hand takes hold of the patient's arm. During this treatment, which consumes only a few moments, the patients lie down in turn on couches provided for the purpose. Nervous and mental diseases seem to predominate. The clinic usually administers to about seventy-five people at a session, mainly young men and women. Patients who have been helped are enthusiastic in their claims of cure and take pleasure in testifying to the efficacy of the treatment, some speaking of it as magic and quite superior to anything they have ever experienced elsewhere. They volunteer this information and recite their testimony in the manner of an oft repeated routine performance. The services of the clinic are free. There is a nominal charge for laboratory examinations when the patient is able to pay for them.

OTHER PROTESTANT CHURCHES

Healing has not been taken up in a systematic way in other Protestant churches, but the interest in it is keen. Many churches have opened their doors to various teachers of the New Thought school. The work takes the form of a series of free public lectures, supported by free will offerings and followed by private courses, which usually cost about $25 for a series of six or eight lectures. Private consultations are also a feature. Other churches have held evangelistic services during the visits of various divine healers to this city. Some physicians report that clergymen have helped them materially in the treatment of particular types of patients. Physicians also enlist the clergyman's aid in the hospitals and in the home when it is felt that his influence will help to raise a patient's morale, as it frequently does with certain types.

Guild of Health.—This organization is of comparatively recent development along lines similar to those of the Nazarene movement, in that it seeks to establish prayer guilds in churches. The Guild of Health, however, confines its work to Protestant churches other than the Episcopal, and emphasizes the educational rather than the ceremonial approach. Rev. Franklyn Cole Sherman, formerly rector of St. Paul's Church in Akron, Ohio, is the founder. The headquarters are in Cleveland. Since its foundation three years ago, it has twice been necessary for the guild to move to larger quarters. Its work is carried on through lectures, literature and personal service on the part of Mr. Sherman. The purposes of the work as stated by Mr. Sherman are:

1. To present a Christian philosophy of life, in harmony with modern philosophy and psychology.
2. To show how the Christian religion can be made practical in the daily life. Special attention is given to problems of mental and physical health.
3. To demonstrate the practical methods that have been found effective, the technic of faith and prayer.

Mr. Sherman is an enthusiast with regard to spiritual healing. He believes that he was himself cured of tuberculosis thereby, and that, if proper technic is developed, all diseases, both functional and organic, may be attacked by this method. Cures, declares Mr. Sherman, are effected by coming into direct conscious communion with God. Although Mr. Sherman feels that in time medical attention will be superfluous, he most firmly expresses the opinion that, until a superior method is developed, physicians and clergymen must and should work hand in hand.

The work of the guild is carried on by donations, membership dues, subscriptions to its official organ, a monthly magazine called *Applied Religion,* and free will offerings.

(To be continued)

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1527)

SHAKE MIXTURES

As previously stated, the prescribing of suspensions should, if possible, be avoided. Occasions may, however, arise when it may be desirable to suspend, in watery fluid, either insoluble solids or oils. In the former case, we speak of "shake mixtures" or merely "mixtures"; in the latter case, of "emulsions."

Mixtures, in the pharmacopeial sense, are aqueous liquid preparations that contain finely divided solid matter in partial suspension. Hence, an official mixture is always a cloudy or muddy liquid; as, however, the word is applied in a popular sense to any combination of different ingredients, the term "shake mixture" is more distinctive, and will be used here.

Shake mixtures enable us to administer insoluble substances in fluid form. They have the advantage over powders, divided into separate doses in an appropriate manner, of being less laborious in preparation and therefore somewhat less expensive. Such mixtures have the disadvantage, however, of a certain degree of inaccuracy of dosage; for, even though shaken thoroughly just before taking, a certain amount of separation is liable to take place even while the medicine is being poured. It is for this reason that the prescribing of shake mixtures should generally be avoided. Accurately divided powders, suspended in water just before taking, are preferable. Mixtures containing poisonous sediments should never be prescribed, for they are dangerous. More important is this medicinal form for external use and for the intramuscular administration of certain medicaments, as mercuric salicylate.

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* This is the twenty-first of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

Should the prescribing of a shake mixture be decided on, it is generally best to add mucilage, syrup or glycerin to the liquid holding heavy insoluble substances in suspension, so as to increase the viscosity of the liquid, thereby lessening the rapidity of separation and increasing the accuracy of dosage.

Perhaps best for the suspending of heavy powders is the (6 per cent) mucilage of tragacanth, from 5 to 10 per cent of which suffices for all purposes. Mucilage of acacia is less efficient, from 25 to 50 per cent of its mucilage being necessary for heavy powders. Syrup or glycerin must be employed in still larger quantities, to be of much service. Nevertheless, there are reasons why glycerin is at times preferable to all others:

1. The other suspending agents do not keep well, having a tendency to ferment, especially in hot weather.
2. Bismuth subnitrate may form with mucilage of acacia a heavy mass that settles to the bottom of the bottle, from which it cannot be dislodged after a few days' standing by even violent shaking.
3. Preparations intended for application to the skin (lotions) containing mucilage are apt to leave an unpleasant sensation of tightness after drying. Glycerin added to the extent of about 5 per cent produces a smoother lotion, without this objectionable tendency. More may be objectionable. Unfortunately, the suspending qualities of glycerin are rather slight.

Because of its liability to ferment on account of the sugar and acacia that was present in it, the chalk mixture of the new pharmacopeia is made with prepared chalk (6 per cent), glycerin (10 per cent), cinnamon water (40 per cent) and water, and is now endowed with good keeping qualities. Its dose is 15 cc., or 1 tablespoonful.

The only other mixture left in the Pharmacopeia is the compound mixture of glycyrrhiza, also known as "brown mixture." This is a typical remnant of the good old days when medicine not only looked brown but also had a rather "dark brown" taste. Its popularity is due to the activity of the 2 mg. of opium and 1 mg. of antimony and potassium tartrate per dose of 4 cc. contained in it, and probably also the fact that the presence of these is not even suggested by the title. As this may lead to the use of an opiate in a cough in which it may not be desirable, it is evident that the ethics of naming a mixture after its most active ingredient cannot be sinned against with impunity even by the Pharmacopeia.

Though not thus named, magnesia magma (milk of magnesia) and ferric hydroxide with magnesium oxide (arsenic antidote) are really mixtures. In each of these cases, advantage is taken of the fact that substances just precipitated—being partly colloidal—are more easily kept in suspension than the same material after it has been dried.

EMULSIONS

Emulsions are mixtures of milky appearance, made by suspending oily or resinous substances in aqueous liquids.

The object of emulsification is to render certain substances that are insoluble in water freely mixable with this fluid, which makes it easier to disguise the taste of substances, facilitates their absorption, and permits admixture of other medicaments.

Two immiscible fluids can, of course, be mixed only if one of these, dispersed into minute droplets (the disperse phase), is suspended in the other fluid (the continuous phase). If oil and water are violently shaken together, they will form a milky fluid—an emulsion—which on standing soon separates into its components. If, however, colloids, such as gum, protein or soap, are present in proper proportion, the separation does not readily occur. Colloids evidently keep the disperse phase from coalescing. Just how they do this is not completely understood. Viscosity and lowering of surface tension are no doubt two influences they introduce that favor emulsification. There may, however, be other factors, such as the formation of a surface film on the droplets of oils and the modification of electric charges. The smaller the droplets, the higher the viscosity; and the more nearly equal the density of the two liquids, the more stable will be the emulsion. Rarely are these factors so perfectly balanced that the emulsion keeps indefinitely. Usually, partial separation takes place sooner or later. However, if the emulsion is well made, mere shaking would suffice to produce uniformity.

Though there is no essential difference between them, emulsions are usually subdivided into two classes: natural emulsions and artificial emulsions. Natural emulsions are exemplified by milk and by yolk of egg. The milk juices existing in plants are natural emulsions, which, when dried, yield an intimate mixture of gum and resin, the gum-resins, which merely require the addition of water to produce an emulsion. The official emulsion of asafetida is an example of this kind of emulsion. It is prepared by rubbing up 4 per cent of asafetida with water and straining. It is used as a carminative. Its dose is given in the U. S. Pharmacopeia at 15 cc. (1 tablespoonful). Probably the best use for this emulsion in tympanites is to give it in much larger dosage by rectum. For peroral administration, as a carminative, asafetida is much more humanely prescribed in capsules.

When oily seeds, as almonds, are rubbed with water, the fat they contain in a fine state of subdivision becomes suspended in the colloidal solution formed by the action of water on the protein of the seed, producing an emulsion. Such a preparation was official in the last Pharmacopeia as emulsion of almond.

The fact that emulsions are rather good emulsifiers may be taken advantage of in the preparation of emulsions in the household. A turpentine enema useful in the treatment of tympanites may, for instance, be prepared in the home by beating from half a teaspoonful to 1 teaspoonful of turpentine with the yolk of an egg, and then gradually adding a pint or a quart of warm water. If these directions are not given and the turpentine is merely mixed with water, the oil floating on the top will enter the rectum last and undiluted, causing a proctitis with its often almost intolerable tenesmus. As another instance of the domestic preparation of an emulsion may be cited the following method of administering castor oil: A cup of milk is heated to the boiling point and shaken up—preferably in a lemonade shaker—with ice cold castor oil. If this is taken immediately, before the oil has had time to separate, no other impression than that of drinking rather rich cream is conveyed to the palate.

If we desire to produce an emulsion of an oil unassociated with an emulsifier, an artificial emulsion, we may do so by simply shaking or triturating the oil with a colloidal liquid, such as mucilage of acacia or extract of malt. A better method, however, consists in reproducing the condition present in gum-resins or in seeds; namely, in first securing an intimate admixture of the oil and the gum, and then adding the water with active trituration, the oil being dashed into globules at the same time that the water dissolves the gum. In order to be successful with this method, it is necessary to have a sufficient quantity of gum mixed with the oil, the most generally useful proportion being 1 part of gum to 4 parts of fixed oil (2 or 3 parts of volatile oil). It is likewise necessary to add enough water to dissolve the gum at once, avoiding, however, an excess of water, which would thin the mucilage, rendering it less efficient as an enveloping agency. A suitable proportion is 2 parts of water for 1 part of gum.

The Pharmacopeia contains a formula for cod liver oil emulsion (dose, 1 tablespoonful), which contains 50 per cent of the oil, 12.5 per cent of acacia, 10 per cent of syrup, and 0.4 per cent of methyl salicylate (wintergreen). The National Formulary affords a variety of other flavors that might be resorted to should the wintergreen flavor pall on the patient's palate. The National Formularly also has a formula for a castor oil emulsion, which contains 30 per cent of oil, and hence may be given in doses of 3 tablespoonfuls.

The official emulsion of oil of turpentine is an example of a volatile oil emulsion. Each average dose of 2 cc. contains 0.3 cc. of oil of turpentine emulsified by 0.1 Gm. of acacia.

In prescribing extemporaneous emulsions, it must be borne in mind that the three essential ingredients in all emulsions are oil or resin, emulsifying agent and water.

Emulsions may be made to contain from 30 to 50 per cent of fixed oil. Volatile oils or similar liquids, as chloroform, creosote or paraldehyde, are not emulsified as readily. Their emulsification is greatly facilitated by first adding to them one-half their volume of a fixed oil, such as expressed oil of almonds, the solution being then emulsified. This is called emulsification by intervention.

The emulsifying agent *par excellence* is acacia. As previously stated, it should be present in the proportion of 1 to 4 of fixed oil, or 1 to 2 of volatile oil. Whenever a physician is in doubt as to the quantity of emulsifying agent needed, he may simply prescribe "a sufficient quantity" of the emulsifier. Resinous tinctures may be emulsified, and thus a perfect mixture be obtained with water, by adding twice the volume of mucilage of acacia, the latter to be diluted with water as much as possible before adding the tincture, in order to prevent precipitation of the gum by the alcohol. Other emulsifying agents are extract of malt, yolk of egg and condensed milk; they have, however, no advantage over acacia. Saponin is an efficient emulsifier; but it has an acrid taste and irritating qualities which render it objectionable for internal use. For external use, on the other hand, especially for emulsifying tar or similar products, it may be used to good advantage in the form of tincture of quillia, 4 parts, to 1 part of tar; water may then be added in any quantity. Soaps, and alkalis by forming soaps, are useful emulsifying agents for external use; they are undesirable for internal use, because of their disagreeable taste, unless the effect of an alkali is also desired, as is the case in the old efficient but nasty "Lafayette mixture," the copaiba mixture of the National Formulary, formerly much employed in urethritis. It contains, in each 8 cc. dose, 1 cc. of copaiba emulsified by the aid of acacia and solution of potassa, 0.24 cc., with peppermint water and syrup in a somewhat abortive attempt at disguising, and 1 cc. of spirit of ethyl nitrite to reinforce its diuretic action.

Emulsions for internal use are generally sweetened with syrup, glycerin, or extract of malt. They are flavored with volatile oils, the quantity of which should not exceed 0.4 per cent, or with tincture of vanilla.

Incompatibilities.—Syrup or glycerin, if added in large amounts, increases the tendency to separation; hence only moderate quantities of these substances, say 25 per cent, are permissible. Acids and acid salts antagonize emulsification, while, as previously mentioned, alkalis and alkaline salts assist. Substances that are incompatible with gum, such as alcohol or ferric chloride, are incompatible with gum emulsions. Tinctures may be added to the extent of 25 per cent or less, provided the alcohol has no marked solvent action on the emulsified substance (as is the case with castor oil).

It must be remembered that emulsions containing acacia, sugar or other fermentable substance, unless they also contain antiseptic ingredients (as alcohol, 10 per cent), do not keep for more than a few days. Hence only moderate amounts, to last for not more than several days, should be prescribed at a time; and the medicine should be kept in the icebox.

The dose of emulsions ranges from a teaspoonful to a tablespoonful. As they are not digested in the stomach, they are best administered about two hours after meals, so as to be introduced into the intestine as promptly as possible. After all that has been said about emulsions it will be realized why it is best, when the dose is large, to let the oil be taken clear, with or without disguise, as previously discussed.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

TETRAIODOPHTHALEIN SODIUM (see THE JOURNAL, Sept. 26, 1925, p. 975).

Iodeikon Capsules Swan-Myers.—Each keratin coated capsule contains iodeikon, 0 25 Gm

Prepared by Swan-Myers Co., Indianapolis, Ind.

Communal Health Program.—As, perhaps, the greatest contribution to health is to be accomplished by adequate service for the early diagnosis and preventive or early treatment of disease in hospitals and dispensaries and through the companion agencies of the visiting nurse, social work, the convalescent home, the home for chronics or incurables, the preventorium and sanatorium, we must properly include in our program of communal health those facilities and the costs of them which are needed to provide complete medical care free or at part cost to the sick, whether this be for the acute communicable diseases, tuberculosis, venereal diseases, mental diseases, or for the general medical, surgical, obstetrical and pediatric patients provided for in general hospitals and dispensaries.—Emerson, Haven: *Hospital Social Service* **13:**109 (Feb.) 1926.

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SATURDAY, MAY 22, 1926

UNWARRANTED THERAPEUTIC HOPES

Although drastic restriction in diet no longer characterizes the management of diabetes, the problem of suitable foods for diabetic patients still looms large. Insulin is not a "cure"; consequently the most rational policy at present consists, in the words of Joslin, in utilizing this agent along with all those measures that have proved of the greatest value in the treatment of diabetes without insulin. These are: adherence to a diet that will keep the urine sugar-free; avoidance of overnutrition or extreme undernutrition, and a method of life compatible with the strength that such a diet affords. Side by side with the exclusion of foods that promote either glycosuria or ketosis or both has occurred the search for palatable energy-yielding substances that will enrich the dietary of the diabetic patient without giving rise to the untoward consequences mentioned. The proposal for the use of intarvin (glyceryl margarate) by Kahn of New York, whose untimely death has just occurred, represented an attempt to furnish a fat not likely to promote ketosis in its metabolism.

There have been varied efforts to discover derivatives of the sugars of a chemical character such that they will not escape oxidative destruction as ordinary carbohydrates do in the diabetic organism. Caramel-like substances have been recommended, particularly by German clinicians. There are pitfalls, however, which every one interested in such entirely justifiable attempts must learn to avoid. The polysaccharide carbohydrate inulin, which by hydrolysis readily yields the sugar fructose just as starch yields glucose, has been recommended in the past for patients with diabetes. There are experimental evidences that considerable quantities of inulin, or inulin-bearing vegetables such as the Jerusalem artichoke, may be consumed by such patients without augmentation of glycosuria. This does not guarantee an actual utilization or "assimilation" of the inulin, however. There are no enzymes in the alimentary tract of man that are known to digest inulin, although it can be hydrolyzed by the acid gastric juice. It is conceivable, therefore, that the apparent tolerance of diabetic patients for inulin may be due to actual failure of digestion and absorption of this carbohydrate.

The real index of utilization in such instances is derived from observations of the metabolism—evidences of an actual combustion of the product in question. This is emphasized anew by the recent American studies of commercial glucosane preparations.[1] The anhydrosugar glucosane ($C_6H_{10}O_5$) and its polymer, tetraglucosane, are used in Germany in the dietary treatment of diabetes. These substances are reputed to be oxidized by the diabetic patient since, according to Nothmann and Kühnau [2] and others, no extra urinary sugar results after its administration, no rise in blood sugar occurs thereafter, and an antiketogenic and protein sparing action follows its ingestion. It is likewise reported to be glycogenic. The new American experiments demonstrate that large quantities of ingested tetraglucosane are excreted unchanged in the feces. Part may be destroyed by intestinal bacteria. As Deuel, Mandel and Waddell significantly point out, if a substance like glucosane is oxidized in diabetic patients it can be proved only by the demonstration of an increased respiratory quotient following its ingestion, coupled with the proof of its absorption from the alimentary tract and its nonelimination by the kidneys. Only rigorous experimental work of this sort will protect the enthusiast against the disappointment of ill founded therapeutic hopes.

NEPHRITIS AND NUTRITION

The management of patients exhibiting the varied symptoms commonly classed under the general designation of nephritis has been decidedly modified in recent years. The rationale of treatment has usually been expressed as the effort to rest the kidneys, remove the disturbing cause, and give the renal organs a chance to recuperate. These are obviously laudable purposes; but, when subjected to critical consideration, they lose something of their impressiveness. The implication that the kidneys are the only, or at least the foremost, parts of the body involved cannot be regarded as demonstrated; furthermore, it is by no means as clear today as it seemed to be a generation ago how the "rest" of the kidneys can be secured. At first thought it might seem as though starvation would represent the ideal condition for renal rest, as the function of the kidneys is "to excrete the ashes of food." But, as has often been pointed out, starvation does not rest the kidneys. "A starving person," Emerson [3] has remarked, "lives on himself so long as his body contains anything to live on, and consumes first the stored-up sugar, then the fat, then the protein of the muscles, and the ashes of muscles are more irritating to the kidney than those of milk. One would suppose that a fat and carbohydrate diet would be best, since the ashes of these are eliminated through the lungs. But the body must daily have some fresh protein with which to repair its worn protoplasm." Milk has had the greatest vogue as a food that meets most nearly the requirements of the diseased kidneys; yet the conventional quart of milk a day represents at most a scanty allowance of 750 calories for an organism that requires three or four times as much food fuel. A shortage for a few days can be borne with impunity if not actual benefit; but the treatment of the nephritides is usually a prolonged procedure counted by weeks rather than days, so that a negative balance of energy is sure sooner or later to exhibit the effects of the drafts on the body reserves. No individual organ benefits in the long run by an exhaustion of the organism as a whole.

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[1] Deuel, H. J., Jr.; Mandel, J. A., and Waddell, S. S.: The Physiological Behavior of Glucosane, Proc. Soc. Exper. Biol & Med. **23**: 431 (March) 1926.

[2] Nothmann, M., and Kühnau, J.: Die Therapie der Gegenwart **9**: 1925.

[3] Emerson, C. P.: Essentials of Medicine, Philadelphia, J. B. Lippincott Company, 1920.

The foremost component of the "ashes" of protein metabolism is urea. There was a time when this catabolite was charged with being the foremost instigator of harm when the renal function is impaired, notably in uremia. As has previously been pointed out in THE JOURNAL[4] and emphasized by recent writers,[5] the general burden of evidence goes to prove that urea concentrations as great as those encountered in the blood of some patients with nephritis are incapable of producing anything resembling the uremic syndrome. An extended investigation of the nonprotein nitrogenous components of the blood in nephritis has also revealed the fact that retention of these waste products may be, and usually is, lacking or an insignificant feature in certain types of nephritis; and notably in those chronic or subacute types which are characterized especially by edema which is not due to cardiac decomposition, the parenchymatous nephritis of older terminologies, the nephroses and the nephrotic forms of glomerulonephritis of Volhard and Fahr.[6] At present there is a recrudescence of the widely held opinion that diets exceptionally rich in protein, particularly in the form of meats, are a provocative of degenerative renal changes.[7] One of the foremost scientific contributions of recent years has been the actual demonstration that in certain types of so-called nephroses the loss of protein through the urine may actually be attended with a serious reduction in the concentration of the plasma proteins. This now constitutes a problem in protein replacement from a new standpoint.

It must be evident to critical students of the subject that the questions reviewed need to be approached with an open mind from new directions. The kidneys should no longer remain the sole center of interest in nephritis, at least so far as treatment is concerned. It is highly important, however, that the pendulum of the new enthusiasm shall not be allowed to swing to other extremes, such as the actual administration of urea or the widespread institution of high-protein diets in nephritis, without a careful scientific control, lack of which has marked the efforts of the past that were motivated by essentially theoretical considerations. Peters and his collaborators[5] at Yale University School of Medicine have pointed out that many nephritic patients present a specious appearance of being well nourished, owing to the existence of some edema. On proper investigation, they give evidence of considerable deprivation of protein, which may be due in part to dietary mismanagement. The further possibility that certain acute stages of parenchymatous nephritis may be characterized by an abnormally high protein metabolism should not be overlooked. The Yale clinicians assert that the total urinary nitrogen of many patients with such disease in acute and chronic forms is not a satisfactory measure of nitrogen breakdown. The latter can be estimated only from the urinary nonprotein nitrogen after proper allowance has been made for changes in blood and tissue nonprotein nitrogen and variations of body weight due to diuresis or accumulation of edema. By the administration of large amounts of carbohydrate and fat it has proved possible to reduce the protein catabolism to from 0.5 to 0.7 Gm. per kilogram daily. If enough protein is given to cover the nitrogen catabolism plus an additional amount equivalent to that lost as albumin in the urine, nitrogen wastage may be prevented. Most of these patients when they enter the hospital show evidences of previous protein deficiency. If they are given more than enough protein to replace the amount lost in the urine, they will store the excess within certain limits, thus repairing the effects of previous inroads on the stores of protein in the body.

High levels of nonprotein nitrogen in the blood are, of course, sources of concern to the clinician. As Peters points out, a positive nitrogen balance cannot be interpreted as evidence of inability on the part of the kidney to excrete protein waste products; nor is a negative balance a sign that the patient is overcoming the effects of such a retention. The nitrogen balance and the level of the blood nonprotein nitrogen are only indirectly dependent on the amount of protein in the diet and are only partly determined by the functional state of the kidney. The rate of nitrogenous metabolism in these cases appears to be the chief determinant of the level of blood nonprotein nitrogen. In the Yale studies the latter has been elevated only in periods when the metabolism was relatively high and usually when there was a negative nitrogen balance. Increasing dietary protein can then be expected to raise the nonprotein nitrogen of the blood only if it raises the protein metabolism of the body.

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4. Urea and Uremia, editorial, J. A. M. A. **77:** 1496 (Nov. 5) 1921; Historical Facts Regarding Urea, ibid. **78:** 1057 (April 8) 1922; Where Is Urea Formed? ibid. **78:** 1540 (May 20) 1922; Conditions Attending the Excretion of Urea, ibid. **80:** 1073 (April 14) 1923; The Liver and Urea Formation, ibid. **83:** 1336 (Oct. 25) 1924; Urea as a Diuretic, ibid. **85:** 2036 (Dec. 26) 1925.

5. Peters, J. P., and Bulger, H. A.: The Relation of Albuminuria to the Protein Requirement in Nephritis, Arch. Int. Med. **37:** 153 (Feb.) 1926.

6. Volhard, F.: Die doppelseitigen hamatogenen Nierenkrankheiten, 1918. Volhard, F., and Fahr, T.: Die brightsche Nierenkrankheiten, Berlin, 1914. Fahr, T.: Virchows Arch. f. path. Anat. **239:** 32, 1922.

7. Fisher, Irving; and Fisk, E. L.: How to Live, ed. 18, New York, Funk and Wagnalls, 1925, p. 261.

When such an increase contributes only to the restoration of depleted tissue, it has no such effect. In any event, the day for "depleting" nephritic patients over long periods of time seems to have passed. Adequate nutrition seems to be mostly a blessing, even in nephritis.

GASTRIC ACIDITY

More than a century has elapsed since William Prout presented experimental proof for the contention that the acidity of the gastric juice, by that time a recognized fact, is due to free hydrochloric acid.[1] In his communication to the Royal Society[2] is outlined, step by step, the chemical procedure leading to the evidence on which his significant conclusions were based. The hydrochloric acid was accounted for by the difference between the total chloride and that combined with fixed bases and ammonia. Simple and convincing as Prout's results appear, they were not generally accepted until the extensive studies of Bidder and Schmidt had confirmed them.

Two significant series of investigations had their genesis in these early experiments. One was concerned with the correlation of the quantity of gastric acid secreted with the kind of food undergoing gastric digestion; the other dealt with the origin and mechanism of the elaboration of the acid secretion. The experiments of Pawlow have emphasized the fact that the concentration of gastric hydrochloric acid appears to be greater when proteins are ingested than when other types of foodstuffs are consumed; and the current extensive clinical determinations of gastric acidity have been promoted by these studies. On the other hand, there is at present little convincing proof regarding the place from which, or the form in which, the hydrochloric acid enters the stomach. Enzyme action, vital force and opportune, though naive, reversal of well known chemical reactions have all been invoked in an effort to explain the phenomena. The one definite and apparently well founded conclusion is that the chloride of the gastric juice has its origin in the chloride of the circulation.

In recent studies at the Harvard Medical School, Gamble and McIver[3] have again emphasized the importance of the fixed bases in the gastric juice. These investigators have shown that, in juice obtained from Pawlow pouches in animals, there is a striking constancy in the total chloride concentration. When a diet rich in protein is fed, the total chloride concentration does not vary significantly from the average, but the level of fixed base decreases markedly. As a consequence, an increased acidity usually is observed under such conditions. When, on the other hand, a ration poor in protein is given, the fixed base of the gastric juice is increased. This indicates the probability, as the Harvard investigators point out, that with a nearly constant chloride ion concentration, the fixed base level is adjusted in terms of the amount of ingested material capable of binding chloride ion. Since, as these workers further indicate, the chloride concentration in gastric juice is near the value for the total fixed base in blood, it appears that there is a total ionic equilibrium between plasma and gastric juice. Part of the process of secretion of hydrochloric acid in the stomach may thus be a mass action phenomenon with the food protein playing the part of a base as it would at the existing hydrogen ion concentration.

There are repeated instances of similar "indirect activities" in physiology: oxidation not involving oxygen; hemoglobin carrying carbon dioxide without combining with it; and the activity of antienzymes. Perhaps the long sought explanation for the secretion of acid in the stomach is to be found not in the appearance of acid ions but in a movement of basic ions.

Current Comment

OIL OF WINTERGREEN—A WARNING

Among the substances listed in Useful Drugs[1] is methyl salicylate, more familiarly known as oil of wintergreen, and most commonly used in salves or liniments for external application. When thus absorbed or when taken internally, as is sometimes recommended, the drug produces the effects of salicylic acid or the salicylates. Essentially identical doses are suggested. Quantities of 1 Gm. (15 grains) of oil of wintergreen are repeated every hour or two until "maximal permissible amounts" are given, from 6 to 8 Gm. being required to induce symptoms indicative of the limit of tolerance. Salicylates and closely related compounds have a widespread use as analgesics and antipyretics; and they are among the drugs that the laity not infrequently ventures to employ in self-medication. Where this degree of "familiarity" occurs, dangers of improper use always exist. This is clearly emphasized in a recent report of Wetzel and Nourse[2] indicating, what does not seem to be generally recognized, that methyl salicylate in moderate amounts is a powerful poison. While deaths due to this drug have never resulted from its therapeutic use, instances of untoward effects following accidental or intentional self-administration have been reported. In reviewing the known cases, Wetzel and Nourse ascertained that fatal poisoning may be produced by relatively small amounts of methyl salicylate. Absorption of less than 15 cc. has repeatedly resulted in death. The unexpected toxicity of this drug may be ascribed in part to its comparatively greater lipoidal solubility and in part to the fact that it suffers less destruction within the body after its absorption, when compared with salicylates. In view of the

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[1] Smith, A. H.: The Centenary of a Unique Discovery, Science **17**: 238, 1923.

[2] Prout, W.: Philosophical Tr., 1824, p. 45.

[3] Gamble, J. L., and McIver, M. A.: Proc. Soc. Exper. Biol. & Med. **23**: 439, 1926.

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[1] Useful Drugs, prepared under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association, Chicago, American Medical Association, 1925.

[2] Wetzel, N. C., and Nourse, J. D.: Wintergreen Poisoning, Arch. Path. & Lab. Med. **1**: 182 (Feb.) 1926.

foregoing circumstances, Wetzel and Nourse believe that the therapeutic use of methyl salicylate should be confined to external administration in the form of a liniment or an ointment; and they point out that Sollmann believes this mode of administration is sometimes more effective than when the drug is given internally. From the standpoint of public welfare, the conclusions of the Cleveland clinicians deserve repetition: Access to oil of wintergreen should be made impossible for children and for persons ignorant of its poisonous properties. A further danger exists in the form of the extract and the spirit of wintergreen, both of which may be in demand because of their alcoholic content.

ARE ENZYMES PROTEIN IN NATURE?

Interest in the physiologic potency of substances that act in great dilution has been accelerated in recent years. The thousands of calories that are requisite for the day's work scarcely arouse more enthusiasm in the student than does the consideration of the almost infinitesimal quantities of certain substances on which our bodily well being seems likewise to be dependent. The alphabetical array of vitamins, the various debated hormones, the enzymes with which digestion and probably other biologic processes are concerned, not to mention other factors such as an occasional fraction of a milligram of iodine, are attracting the attention of the layman as well as that of the scientist. The enzymes represent the longest known "potencies" for producing large effects through small amounts of matter. Naturally there has long been more than a little curiosity as to what these unique substances actually are. From the early history of their investigation it has been realized that they are closely associated with proteins if, indeed, they are not actually albuminous in nature. To assert, as is sometimes done, that enzymes represent the catalytic power of matter in a colloidal state does not promote our understanding of their chemical make-up very much. Enzymes are formed from living matter, and their solutions as usually prepared give the reactions of proteins. However, as Falk[1] has pointed out, the question comes up here again as to whether the compositions as shown by such analyses do not represent merely the source of the enzyme material. The enzyme property might well be only a small part of even the purest preparation that has been separated, and the analyses which have been given only show the general composition of the medium, if this term may be used, which carries or accompanies the enzyme. Nitrogenous substances, mainly of protein nature, form a part at least of all enzyme preparations. In the course of his efforts to "purify" enzymes, Willstätter has lately questioned the conclusion that certain enzymes, at least, are protein in nature. A reinvestigation of the subject by Sherman[2] and his co-workers at Columbia University, in the case of pancreatic amylase as a type, confirms his earlier conclusion that the enzyme either is of protein nature or contains protein as an essential component. This is not the place to review the details of the evidence. It helps us to understand why antiseptics that act chemically on proteins are enormously more destructive of the enzyme than are the antiseptics of the lipoid-dissolving type.[3] Sherman confronts us with the startling announcement that his purified pancreatic amylase has digested as much as 4,000,000 times its weight of starch and formed as much as 2,800,000 times its weight of maltose. This great enzymic activity was shown at a dilution of 1 : 100,000,000, whereas the most delicate tests for protein are probably not valid at dilutions greater than about 1 : 100,000. Thus the failure of protein reactions in solutions enzymically active does not show, as many writers assume, that the enzyme is of other than protein nature, since, as in this case, the enzymic activity may constitute a test a thousandfold more delicate than any reaction that can be employed as a test for the presence of protein material.

UREA AND THE LIVER

Not long ago a group of investigators[4] at the Mayo Foundation furnished evidence that the production of urea is entirely dependent on the functioning of the liver in the body; at any rate, urea formation evidently ceased when this large glandular organ was extirpated. The technic of the research was brilliant and the demonstration so cogent that this contribution is likely long to remain one of the classic studies in experimental physiology. The conclusions to which they led seem to be established beyond unfavorable criticism. Nevertheless, it is gratifying to note, in recent observations by Morgulis,[5] a confirmation of the significant thesis as to the specific rôle of the hepatic cells in relation to urea. The argument has been advanced that, to prove the liver to be the predominant place for urea formation, it is necesssary to show that during the early stages of the absorption of amino-acids the increase in the urea content of the blood precedes the increase in its content of amino-acids. As Morgulis formulated the question, it is clear that a preliminary rise in amino-acid nitrogen would not necessarily preclude the possibility of the liver's being the specialized organ for deamination and urea formation, whereas the rise in urea nitrogen preceding a rise in amino nitrogen would furnish positive proof of the liver's important rôle as an organ of urea formation. The tests of Morgulis at the University of Nebraska College of Medicine demonstrate that after feeding protein *products the urea nitrogen of the blood "rises either* before there is an appreciable increase in the blood amino-acids, or, when the rise is concomitant, the urea nitrogen increase is much more striking." In this connection Morgulis ventures the suggestion that what we generally designate as "urea formation" may in reality not represent a single process at all. It is not improbable that the deamination of the amino-acids and the synthesis of urea may be independent processes. It may not be amiss to repeat an earlier statement in

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[1] Falk, K. G.: The Chemistry of Enzyme Actions, New York, Chemical Catalog Company, 1921.

[2] Sherman, H. C.; Caldwell, M. L., and Adams, M.: Further Experiments on the Purification of Pancreatic Amylase, Proc. Soc. Exper. Biol. & Med. **23**: 413 (March) 1926.

[3] Sherman, H. C., and Wayman, M.: J. Am. Chem. Soc. **43**: 2454, 1921.

[4] Bollman, J. L.; Mann, F. C., and Magath, T. B.: Studies in the Physiology of the Liver, VIII, The Effect of Total Removal of the Liver on Urea Formation, Am. J. Physiol. **69**: 371 (July) 1924.

[5] Morgulis, Sergius: Blood Changes During Digestion, with Special Reference to Urea Formation, J. Biol. Chem. **66**: 353 (Dec.) 1925.

The Journal:[6] In two years, chemists throughout the world will celebrate the centenary of Wöhler's classic synthesis of urea—the first compound of biologic origin to be duplicated synthetically in the laboratory without the intervention of "vital" processes. May we not hope that the celebration will be enriched by a more complete understanding of how urea is synthesized by nature—in the liver?

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Personal.—Dr. Lester B. Rogers, formerly medical director of the U. S. Veterans' Bureau, has accepted the position of medical director of the St. Francis Hospital, San Francisco.

Physician Sentenced.—Dr. Earl Harlan, Colusa, was found guilty of violation of the Harrison Narcotic Law, it is reported, and was sentenced to three years in a federal prison, March 13.

Health at San Diego.—Telegraphic reports to the chamber of commerce from sixty-nine cities with a total population of about 29,000,000 for the week ending May 1 indicate that the highest mortality rate (22.1) was for San Diego, and, that the rate for the group of cities was 14.4. The mortality rate for San Diego for the corresponding week last year was 18.7, and for the group of cities, 13.7.

University News.—Stanford University Medical School recently received $1,000 from Dr. Morris Herzstein for the establishment of a lectureship on the diseases of the Pacific Basin.——Dr. Frederick L. Reichert of Johns Hopkins University Medical School, Baltimore, has been appointed associate professor of surgery in the Stanford University Medical School, beginning with the year 1926-1927.

DISTRICT OF COLUMBIA

Personal.—Dr. Hubert Work, secretary of the interior, and former president of the American Medical Association, was reelected president of the Medical Veterans of the World War at the annual dinner at Dallas, Texas, in April.

Hearings on Antivivisection Bill.—Hearings were held, May 6, before a senate committee on the bill introduced by Senator Fletcher of Florida, which would prohibit vivisection among dogs in the District of Columbia, the territories and our insular possessions. Among those who appeared in opposition to the bill were Dr. Reid Hunt, professor of pharmacology, Harvard University Medical School, Boston; Major Henry J. Nichols, Army Medical Corps; Lieut. Comdr. Joseph R. Phelps, Navy Medical Corps; John S. Buckley, chief, pathologic division, Bureau of Animal Research; Alice C. Evans, Mrs. Ella A. Enlows, Hygienic Laboratory, and Dr. Victor C. Vaughan, chairman of the medical section of the National Research Council.

Bureau of School Hygiene Proposed.—The establishment of a bureau of school hygiene in the health department of the District of Columbia is proposed in a bill introduced, May 3, by Congressman Begg of Ohio. The bureau would provide medical examinations for all pupils in public and private schools of the district; medical examinations for teachers in public schools; sanitary inspections of schools and school equipment, and nutrition classes. The bill is the outgrowth of an investigation begun by the Monday Evening Club, which showed that Washington is far behind other cities in safeguarding the health of school children. In commenting on the bill, Congressman Begg said: "Today the development of health is recognized by all educational leaders as one of the primary objects of all education. Cities throughout the country recognize the great importance of this work, but in this movement the capital of our nation is far behind. The situation calls for serious attention."

FLORIDA

Health at Jacksonville.—Telegraphic reports to the department of commerce from sixty-seven cities with a total population of about twenty-nine million for the week ending April 17 indicates that the highest mortality rate was for Jacksonville (22.4), and that the mortality rate for the group of cities was 15.8. The rate for the corresponding week last year in Jacksonville was 14.9 and for the group of cities as a whole, 14.5.

ILLINOIS

Resolution About Anesthetics.—The Rock Island County Medical Society, Moline, passed a resolution, May 11, reiterating, among other things, that the giving of anesthetics is the practice of medicine, and resolving that it shall be unethical for any member of that county society to employ any one but licensed and qualified physicians to administer anesthetics except under supervision in emergency.

Society News.—Dr. Augustus G. Pohlman, professor and director of the department of anatomy, St. Louis University School of Medicine, St. Louis, gave an illustrated lecture before the Peoria Medical Society, Peoria, May 4, on "An Interpretation of Rudimentary Organs in the Human Body."——Dr. George E. Shambaugh, Chicago, was guest of honor at a dinner given by the Morgan County Medical Society, May 3.——The Medical and Dental Arts Club, Chicago, will give a dinner at the Sherman Hotel, May 27, 6:30 p. m.; members may bring with them as guests of the club other physicians and dentists.

LOUISIANA

The "Grace Grey" Commissioned.—The new boat of the Louisiana State Board of Health, *Grace Grey*, will make its first inspection trip of the Louisiana oyster beds next week; the boat is 48 feet long.

"Dr. Remington" Sentenced.—Charged with representing himself as an agent of the U. S. Public Health Service and of the department of justice, William E. Krebs of Ohio, alias Dr. R. M. Remington, alias Andrew B. Walker, was found guilty by a jury in New Orleans, April 13, and sentenced to two years in the federal penitentiary at Atlanta, Ga., it is reported; on the strength of his misrepresentation, Krebs is said to have been able to cash a draft on a bank which did not exist.

Society News.—The Orleans Parish Medical Society voted to raise its dues, beginning March 1, to a dollar and a half a month. The board of directors of the society has voted to set aside $250 annually from the increase in dues, to be used to invite some prominent speaker to deliver an oration, to be known as the "Stanford E. Chaille Oration."——Dr. Alfred P. Crain has been elected president of the Shreveport Medical Society, which society has appointed a committee to make arrangements for a modern medical library to be housed in the Shreveport Memorial Library.

Roentgen-Ray Department Dedicated.—A banquet was held at the Touro Infirmary, New Orleans, April 27, to celebrate the completion of the new roentgenologic department, which was made possible through a donation by the daughters of the late Emanuel Sternberger, in memory of whom the donation was made. Drs. Rudolph Matas, New Orleans, James T. Case, Battle Creek, Mich., Emanuel Libman, Columbia University College of Physicians and Surgeons, New York, and Mayor O'Keefe, New Orleans, were among the speakers. The new department has separate rooms for general radiography, fluoroscopy, cystoscopy and deep roentgen-ray therapy.

Personal.—Dr. David A. Lines has resigned as collector of internal revenues at New Orleans, effective, May 1.——Dr. Stanford Chaille Jamison has been elected president of the New Orleans Tuberculosis and Public Health Association; Drs. David L. Watson and J. George Dempsey were elected vice presidents of the association.——Dr. William Johnson, New Orleans, was elected president of the Louisiana Child Finding and Home Society, April 27.——Dr. Lucian H. Landry, New Orleans, has been reelected president of the Tulane Alumni Association.——Dr. William Scheppegrell has been reelected president of the New Orleans Zoological Society.

Record Rainfall Damages Hospital Supplies.—A rainfall in New Orleans of 9.08 inches in the twenty-four hours following May 2 exceeded all previous records of the Weather Bureau for May, and caused damage estimated by the *Times Picayune* at more than $100,000. Water burst open the basement doors of the Southern Baptist Hospital, damaging supplies to the extent of about $60,000 and flooding the basement to the depth of more than 4 feet. Visitors and others were marooned in the hospital for the night, the hospital grounds also being submerged to a depth of about 2 feet. This deluge was surpassed in New Orleans in 1883, however, when the rainfall for a twenty-four period amounted to 9.22 inches.

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[6] The Liver and Urea Formation, editorial, J. A. M. A. **83**: 1336 (Oct. 25) 1924.

MARYLAND

Deaths from Rabies.—Of the seven deaths from rabies in Maryland from 1911 to 1925, four, says the state department of health, occurred in 1925. There were 183 persons who were given Pasteur treatment in 1925, or more than double the number treated in any previous year. Not any of the four persons who died in 1925 had received the Pasteur treatment, and not one of those who took the treatment developed the disease.

Tuberculosis Institute.—Dr. William H. Welch, director, Johns Hopkins School of Hygiene and Public Health, gave the opening address at the regional institute for tuberculosis workers, April 12. Meetings were held twice daily for about two weeks and attended by persons engaged in tuberculosis work in Maryland, Pennsylvania, New Jersey, New York, West Virginia, South Carolina, Colorado and the District of Columbia. Among the other speakers were Philip P. Jacobs, Ph.D., publicity director of the National Tuberculosis Association; Dr. Martin F. Sloan, president, Maryland Tuberculosis Association, and Dr. William J. McConnell, connected with the Philadelphia Health Council.

Annual Conference of Health Officers.—At the annual conference of health officers and boards of health of Maryland to be held at Johns Hopkins School of Hygiene and Public Health, Baltimore, May 28-29, under the auspices of the state board of health, Governor Ritchie will make the opening address; among others, Dr. R. Eugene Dyer, assistant director, Hygienic Laboratory, Washington, D. C., will discuss "Scarlet Fever Immunization"; Dr. George H. Ramsey, deputy commissioner, Michigan State Department of Health, Lansing, "Diphtheria Immunization as an Administrative Public Health Problem"; Dr. Robert H. Riley, chief, Maryland Bureau of Communicable Diseases, "The Typhoid Situation in Maryland." Physicians, health officers and any other interested officials have been invited to attend the conference.

MASSACHUSETTS

Dr. Lund Resigns.—Dr. Fred B. Lund has resigned as surgeon in chief of the Boston City Hospital, according to the Boston *Herald,* to become chief of the surgical staff of the Carney Hospital. Dr. Lund has been connected with the Boston City Hospital for nearly thirty years.

State Sanatorium Opened.—More than 300 physicians, students and others attended the formal opening of the Lakeville State Sanatorium, April 27, and made a tour of the buildings and the model dairy connected with the sanatorium. Among the speakers were the governor, Alvan T. Fuller; Dr. James S. Stone, president of the Massachusetts Medical Society, and Dr. Linsly R. Williams, director of the Massachusetts Tuberculosis Association.

Society News.—Dr. George L. West, Newton Center, has been elected president of the Middlesex South District Medical Society, and Stephen M. Biddle, Cambridge, secretary. ——At the annual meeting of the Berkshire District Medical Society, Pittsfield, April 29, Dr. Richard Lewisohn, New York, spoke on "Transfusion by the Citrate Method: Technic, Indications and Results."——Dr. Linsly R. Williams, managing director, National Tuberculosis Association, among others, addressed the annual meeting of the Massachusetts Tuberculosis League, April 26, Boston; at the meeting Dr. Kendall Emerson, Worcester, was elected president of the league, and Dr. Frederick T. Lord, Boston, vice president.——Dr. Leo M. Davidoff, Boston, gave an illustrated lecture at the annual meeting of the Essex South District Medical Society, Gloucester, May 11, on "A Trip to the Far North with MacMillan."

MINNESOTA

Hospital News.—The Oakland Park Sanatorium is to erect a $30,000 addition; this institution is the State Tuberculosis Hospital of Pennington, Marshall, Roseau and Red Lake counties.——The Ancker Hospital, St. Paul, is constructing a new five story contagious department which will have a capacity of 280 beds.

Society News.—Dr. Willis C. Campbell, professor of orthopedic surgery, University of Tennessee College of Medicine, Memphis, addressed the Minnesota Orthopedic Club, April 6, at the University of Minnesota, Minneapolis, on "Immobilization of Joints."—Dr. E. T. F. Richards addressed the Academy of Medicine, April 14, at the Town and Country Club, Minneapolis, on "Infectious Mononucleosis"; Dr. John G. Cross addressed the Minnesota Academy of Medicine at the Town and Country Club, Minneapolis, May 12, on "The His Bundle and Its Disturbances."

NEW HAMPSHIRE

State Medical Meeting.—The one hundred and thirty-fifth annual meeting of the New Hampshire Medical Society will be held at the state armory, Concord, May 25-26, under the presidency of Dr. Thomas W. Luce, Portsmouth. Among the guests will be Dr. Charles H. Mayo, Rochester, Minn., who will speak Wednesday on "Developmental Anomalies, Especially of the Genito-Urinary Tract"; Dr. William H. Park, New York, "Use of Scarlet Fever Toxin and Antitoxin in the Prevention and Cure of Scarlet Fever"; Dr. James P. O'Hare, Boston, "Chronic Nephritis and Hypertension," and Dr. Walter W. Chipman, Montreal, on "Etiology and Treatment of Dysmenorrhea." Governor and Mrs. Winant will entertain members, ladies and guests at their home, Tuesday evening; there will be automobile excursions for the ladies, Wednesday, and the annual banquet Wednesday evening at the Eagle Hotel. The state association of local health officers and the state association of registered nurses will meet in Concord at the same time as the medical association.

NEW JERSEY

Home for Babies.—The Ocean City Seashore Home for Babies will open its wards for the season, June 1, and will close, September 15. Information as to the type of patients admitted may be obtained from the medical director, Dr. Henry H. Perlman, 1904 North Franklin Street, Philadelphia.

Society News.—Dr. Edward A. Strecker, professor of neurology, Jefferson Medical College, Philadelphia, addressed the Camden City Medical Society, May 11, on "The Psychology of the Normal Child."——Dr. Stanley M. McGeehan, Atlantic City, reported a case of granuloma inguinale before the Atlantic County Medical Society, May 14. ——Dr. Louis C. Williams addressed the Hunterdon County Medical Society at Flemington, April 27, on "Treatment of Erysipelas by Heliotherapy."

State Medical Meeting.—The annual meeting of the Medical Society of New Jersey will be held at Haddon Hall, Atlantic City, June 17-19. Among other things, there will be a symposium on cardiovascular renal disease opened by Dr. Frederick M. Allen, and a symposium on urology opened by Dr. Hugh H. Young, of the Brady Clinic, Johns Hopkins University, Baltimore; Dr. Samuel W. Lambert, New York, will direct a moving picture, "Exhibition of Heart Lesions." A program of unique entertainment has also been arranged.

Chiropractors in Court.—The Board of Medical Examiners of New Jersey submits the following list of chiropractors who have been brought recently into court, charged with practicing medicine without a license. All but four, who were put in jail, paid fines:

Charles H. Witter, Dunellen.
Raymond O. Danese, Hudson Heights (put in jail for twenty days).
Floyd Farrell, Hackensack.
Regina B. Heim, Newark.
Cyril H. Guterl, Jersey City.
Roy Pierce, New York.
Alson J. Walker, Orange (put in jail for fifteen days).
Mary Bumby (tried in Elizabeth District Court and jailed for one day).
Clarence U. Pole, Audubon.
William Joseph, Collingswood.
Jack M. Blank, Camden.
Thomas S. Dukes, Camden.
Andrew J. Corey, Verona.
Joseph Bowley, Burlington.
Charles R. Breamer, Pleasantville (put in jail for ten days).
Hugh M. Condie, Camden.
Kathryn Mikle, Fairview.

NEW YORK

Medical School Announces Opening.—The University of Rochester announces that the formal opening of its School of Medicine and Dentistry will be, October 25-26. There will be scientific medical conferences on these days; papers will be presented by Prof. Friedrich Müller, Munich; Dr. Charles J. Martin, president of the Lister Institute of London, and other leaders in medical science. Formal invitations will be issued in September.

Governor Signs New Medical Practice Act.—Governor Smith has signed the new medical practice act, recently passed by the state legislature and known as the Webb-Loomis bill. This legislation, drafted, primarily, to protect the public against unqualified and illegal practitioners, was described and commented on in The Journal, May 1, p. 1354. ——The governor announced, May 17, that he had vetoed a bill which would have permitted chiropodists and podiatrists to use the title "doctor" or its abbreviation.

New York City

Resolution on Commercialized Lectures.—The executive committee of the New York Electrotherapeutic Society has unanimously passed the following resolution:

> Whereas, Various commercial concerns and enterprises dealing in electrotherapeutic and allied apparatus are with increasing frequency holding public lectures in New York, which are in effect and in fact nothing more than lectures advertising their goods; and
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> Whereas, Audiences to those lectures are not limited to members of the medical profession; and
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> Whereas, The lectures themselves are not carefully selected or given, and
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> Whereas, The audience must necessarily be misled; be it therefore
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> *Resolved* By the Executive Committee of the New York Electrotherapeutic Society that the department of health should control such lectures by licenses after due and proper investigation, so that the public may be protected from the aforesaid abuses.

New Vanderbilt Clinic.—President Nicholas Murray Butler of Columbia University announced, May 4, that Frederick W. and Harold S. Vanderbilt have given $500,000 to rebuild the Vanderbilt Clinic in connection with the new medical center which is now in the course of construction. The Vanderbilt Clinic was established in 1886 by the brothers Cornelius, William K., Frederick W. and George W. Vanderbilt. It always has been an integral part of Columbia's work in medicine, and the new institution, President Butler said, will correlate and unite the entire teaching now carried on by the university at the clinic on Amsterdam Avenue and Sixtieth Street, at the outpatient department of the Presbyterian Hospital at Madison Avenue and Seventieth Street, and at Bellevue Hospital. President Butler also announced the receipt of another anonymous gift of $125,000, to be expended at the discretion of the board of trustees for the benefit of the medical school.

Personal.—Michael M. Davis, Jr., Ph.D., executive secretary of the committee on dispensary development, United Hospital Fund, has gone to Europe to study outpatient clinical methods.——Dr. James F. Cooper of the American Birth Control League recently made a speaking tour through New England addressing numerous medical societies and other organizations on the subject of birth control; April 4, Dr. Cooper addressed the Orange County Medical Society at Orlando, Fla; March 30, a meeting of physicians at Roanoke, Va.; March 31, a special meeting in Johnson City, Tenn.; March 29, the county medical society at Cumberland, Md.; April 1, the Medical Society of Chattanooga, Tenn., and April 2, the Roane County Medical Society, Harrison, Tenn.——Dr. Joseph J. Eller has been elected president of the Manhattan Dermatological Society for the ensuing year. ——Dr. Manuel Uribe Troncoso has been promoted to professor of ophthalmology in the New York Post-Graduate Medical School and Hospital.——Dr. Charles C. Williamson, formerly director of information service of the Rockefeller Foundation, has been appointed director of the libraries of Columbia University.——Dr. Alexander Lambert has been elected a director of the New York Tuberculosis and Health Association.——Queens University, Kingston, Ontario, Canada, conferred the honorary degree of LL.D. on Dr. William H. Rankin, May 6, who graduated from that institution thirty-seven years ago.

OREGON

Society News.—Dr. Frank W. Lynch, professor of obstetrics and gynecology, University of California Medical School, gave the annual lecture on gynecology before the Portland Academy of Medicine, April 8, and was guest of honor at a dinner given by the president, Dr. Stuart H. Sheldon, at the Arlington Club.

Personal.—Dr. George E. Fortmiller, Albany, has been elected president of the Albany General Hospital Association, succeeding the late Dr. James P. Wallace.——Dr. Harry Y. Spence, Eugene, has been appointed Red Cross instructor in first aid for the Pacific Division.——Dr. Ernst A. Sommer, Portland, has been reelected president of the Oregon Public Health League, and Dr. Frederick D. Stricker, Portland, secretary, reelected.

Illegal Practitioner Fined.—"Dr." George Kirkpatrick, it is reported, was fined $100 in the district court at Portland, April 12, after a jury had found him guilty of practicing medicine without a license. A complaint was filed against Kirkpatrick by the Oregon Public Health League, it is said, when he was found to be selling some "cure" for ten dollars a bottle. Kirkpatrick's "Pul-Bro-Tu", a consumption cure, so called, was the subject of an article under the propaganda department of The Journal, March 6.

Hospital News.—Drs. Herbert C. Eastland and Charles Billington are in charge of the new emergency hospital opened in Reedsport.——The Pacific Christian Hospital at Eugene has just added twenty-four beds by remodeling the fifth floor. ——The La Grande Hospital has installed a new roentgenray outfit.——The Dallas Hospital, Dallas, announces that it will construct a thirty room addition, and that Dr. William R. Taylor, Forest Grove, will be added to the staff.——The Klamath Indians have protested against the establishment of a tuberculosis sanatorium at their agency.

PENNSYLVANIA

Hospital for Crippled Children.—Construction work on the first units of the state hospital for crippled children will start in the near future. The site for the hospital is in Lancaster County just west of Elizabethtown on the Harrisburg and Lancaster Pike; it comprises about 245 acres, of which about 60 are woodland; also a modern dairy barn, which will be retained by the state. The water supply will be from the Elizabethtown Water Company; the institution will be connected with the new sewage disposal plant erected in Elizabethtown, and electricity is already on the grounds.

State Welfare Department.—A pamphlet describing the work of the state welfare department was recently issued by the public Charities Association of Pennsylvania, 311 South Juniper Street, Philadelphia. The state welfare department was created by an act of the state assembly in 1921, which united and coordinated a number of different bureaus and added the duties of supervising all agencies for the care of children. The new department took over the duties of the old Board of Charities, the Committee on Lunacy, the Mothers' Assistance Fund and the Prison Labor Commission. The state welfare department now has four bureaus: (1) Bureau of Children, (2) Bureau of Assistance, (3) Bureau of Mental Health and (4) Bureau of Restoration. This pamphlet may be obtained, free of charge, from the public Charities Association.

Philadelphia

"Travel Trip" of Southern Internists.—The Southern Interurban Clinical Club of Internists made its fifth "travel trip," May 6-7, when it was the guest of the University of Pennsylvania Hospital, the Philadelphia General Hospital and the Jefferson Hospital; clinics, demonstrations and papers were presented. Dr. Isaac I. Lemann, New Orleans, is president of the club, and Dr. Bryce W. Fontaine, Memphis, Tenn., secretary-treasurer.

Personal.—At the recent dedication of the Philadelphia County Medical Society's new building, Dr. James M. Anders spoke on the efforts of the society, covering a period of fifteen years, to secure a suitable home.——Dr. William H. Perkins sailed from New York, May 4, for Europe to study medical teaching methods before taking up again his post in Siam under the Presbyterian Board of Foreign Missions; Dr. Perkins left Siam in 1923 to do postgraduate work at Jefferson Medical College; later he was on the staff of the Philadelphia General Hospital.

Society News.—Drs. Nathaniel W. Winkelman and George Wilson addressed the Philadelphia Psychiatric Society, May 14, on "A Clinicopathologic Study with Especial Reference to the Significance of the So-Called Typical Laboratory Findings in General Paresis", and G. E. Partridge, Ph.D., and Dr. Clifford B. Farr on "Current Conceptions of Bodily Structure in Relation to Temperament and Character."—— About 350 members of the Philadelphia Medical Club visited the Naval Academy, Annapolis, Md., May 13, where, following a luncheon at Carvel Hall, they were escorted on an inspection tour by naval officers.

Seminars on Physical Therapy.—The Philadelphia County Medical Society is conducting a series of five seminars on physical therapy at its new home, Twenty-First and Spruce streets, the purpose of which is to discuss informally the various aspects of the subject. Dr. Ralph Pemberton was in charge of the May 14 seminar, "Thermotherapy and Hydrotherapy"; Dr. Theodore H. Weisenburg, May 21, "Massage and Manipulation with Demonstrations"; Dr. Frederick A. Cochran, Jr., will be in charge, May 28, "Light Therapy";

Dr. William T. Johnson, June 11, "Diathermy"; the subject for June 4 will be "Radiology"; the speakers will be announced later.

TENNESSEE

Fiftieth Anniversary.—The Memphis and Shelby County Medical Society celebrated its fiftieth anniversary, May 13, at the University Club, Memphis, where a buffet supper was served. Dr. Elmer E. Francis spoke on "The History of Medical Education in Memphis"; Dr. John M. Maury, on "The History of Hospitals in Memphis"; Dr. Richmond McKinney, "History of Medical Journalism in Memphis." Other speakers were Drs. Benjamin F. Turner and William Krauss.

Personal.—Dr. Edward D. Mitchell was elected president of the Women's Hospital of Memphis at the recent annual meeting.——Dr. Martin H. Fischer, head of the department of physiology, University of Cincinnati College of Medicine, will deliver the address at the graduating exercises of the University of Tennessee Colleges of Medicine and Dentistry and School of Pharmacy, June 7, in the city auditorium at 8 o'clock.——Dr. John R. Caulk, St. Louis, who was entertained at dinner, April 6, by members of the Memphis Urologic Society, addressed the Memphis and Shelby County Medical Society that evening.

VIRGINIA

Personal.—Dr. Vincent W. Archer has been promoted from instructor to assistant professor of roentgenology on the faculty of the University of Virginia Department of Medicine, and Drs. Henry B. Mulholland and James E. Wood, Jr., from instructors to assistant professors in internal medicine; the promotions are effective at the next session.

New Medical Organizations.—The Princess Anne County Medical Society has been reorganized; meetings will be held monthly at the Seaside Cottage Sanatorium, Virginia Beach. ——Charlotte County physicians have applied for a charter for the Charlotte County Medical Society, of which Dr. Charles W. Tucker, Drakes Branch, was elected president at the meeting, April 16; the Cumberland County Medical Society has also applied for a charter; at the organization meeting, Dr. Carter Weisiger, Cumberland, was elected president.——The women physicians of Richmond recently issued invitations to all women physicians in the state who are members of the Medical Society of Virginia to attend an organization meeting, April 5, at which the Virginia Medical Women's Club was organized; Dr. Mary B. Baughman, Richmond, was elected president, and Dr. Cora Z. Corpening, Virginia Beach, secretary-treasurer.——Physicians of ten counties met, April 17, at Farmville, and organized the Central District Medical Society of Virginia. Among the guests at the meeting were Dr. William L. Harris, Norfolk, and Miss A. V. Edwards, Richmond, president and secretary, respectively, of the Virginia State Medical Society. Dr. Paulus A. Irving, Farmville, was elected president of the new society; Dr. Ray A. Moore, Phenix, vice president, and Dr. William E. Smith, Farmville, secretary-treasurer.

WASHINGTON

Personal.—Dr. Minard Allison, Monroe, has been appointed physician to the state reformatory at Monroe, to succeed the late Dr. Harry K. Lum.——Dr. William R. Leverton has resigned from the U. S. Veterans' Hospital at Tacoma to take charge of the physiotherapy department of the Tacoma General Hospital.——Dr. Frank Dwyer, formerly of Sedro-Woolley, has been appointed assistant superintendent of the Western State Hospital at Fort Steilacoom.——Dr. Charles S. Hood, Ferndale, has been elected president of the Whatcom County Physicians and Surgeons Club.

Society News.—Dr. E. Frank Chase, Seattle, has been elected president of the Puget Sound Academy of Ophthalmology and Otolaryngology; Drs. John A. Johnson, Tacoma, and Spencer S. Howe, Bellingham, vice presidents, and Dr. Morrill J. Morris, Seattle, secretary-treasurer.——A ten-story medical arts building, costing $250,000, will be constructed at Yakima.——The Medical Section of the King County Medical Society, Seattle, will devote the May 17 and June 21 meetings to a symposium on pulmonary tuberculosis, the former being on the anatomic pathology and the latter on treatment.——Dr. Sidney S. Oppenheimer, president of the Washington State Medical Association, and Dr. George A. Downs, of the public health league, addressed the Walla Walla County Medical Society, April 9.

WEST VIRGINIA

State Medical Meeting.—At the fifty-ninth annual meeting of the West Virginia State Medical Association, Morgantown, May 25-27, under the presidency of Dr. James R. Bloss, Huntington, Dr. Orrin S. Wightman, New York, will discuss "Periodic Health Examination of the Apparently Healthy," and Dr. Southgate Leigh, Norfolk, Va., "Problems Confronting the Profession"; Dr. John H. J. Upham, Columbus, Ohio, a trustee of the American Medical Association, will deliver the oration on medicine, Tuesday evening, and Dr. Chester R. Ogden, Clarksburg, the oration on surgery; Dr. Walter G. Stern, Cleveland, Ohio, will speak, Wednesday morning, on "Some Problems of Modern Orthopedic Surgery." Among other visiting speakers will be Dr. Edward A. Looper, Baltimore; Dr. John B. McMurray, Washington, Pa.; Dr. Paul Titus, Pittsburgh; Dr. Leo Brady, Baltimore; Dr. Verne C. Hunt, Rochester, Minn.; Drs. Joseph E. Moore and Albert E. Goldstein, both of Baltimore, and Dr. Magnus A. Tate, Cincinnati. There will be demonstrations daily at the West Virginia School of Medicine from 2 to 3 p. m. The annual banquet will be Thursday evening.

GENERAL

Automobile Fatalities.—Reports to the department of commerce from seventy-nine large cities for the four weeks ending April 24 show that 424 persons were killed by automobiles, as contrasted with 350 for the preceding four weeks. Eleven cities had no automobile fatalities in the four weeks preceding April 24; Erie, Lowell, New Bedford, Utica and Waterbury had no fatalities during the last eight weeks, and New Bedford and Waterbury had none during the last sixteen weeks.

Accidents in Coal Mines in March.—There were 169 deaths among employees due to accidents in coal mines in March, according to the bureau of mines; 132 of these deaths were in the bituminous mines and thirty-seven in the anthracite mines. There was an explosion, March 8, at Eccles, W. Va., which killed nineteen men and made the total number of major disasters in 1926, to date, seven; for the same period in 1925, there were only three major disasters in mines. The records of the bureau of mines for the first three months of 1926 show 658 fatalities, while for the corresponding period last year they show 630.

The Incubus of the Harrison Narcotic Act.—THE JOURNAL, May 8, commented on a bill which has been introduced in the U. S. Senate "to strengthen" the Harrison Narcotic Act. It was pointed out that this bill would impose additional duties on physicians with respect to the use of narcotics, increase the penalty for violations of the act, and limit the right of physicians to use narcotics. In another section of the same issue of THE JOURNAL the bill was discussed at length. Now a bill of the same purport (H. R. 11612) has been introduced in the House of Representatives. As was stated in THE JOURNAL, the hearings on these bills will be awaited with interest.

Lost—List of Two Hundred and Fifty Names.—At the annual dinner of the Medical Veterans of the World War during the convention at Dallas, Texas, more than 250 physicians gave their names to the secretary, Dr. Arthur T. McCormack, to be enrolled as members. On the way home on the train, these names and other things were stolen from Dr. McCormack's grip, and it is impossible to enroll these members until the list is recovered. Dr. McCormack requests that all those who gave him their names at Dallas, and others who desire, forward their names to him at Louisville, Ky. This organization will soon begin publishing a quarterly which will be devoted almost entirely to the personal history of physicians who served in war.

Society News.—The National Association for the Study of Epilepsy will hold its twenty-fifth anual meeting at the Waldorf-Astoria Hotel, New York, June 7-8, immediately preceding the meeting of the American Psychiatric Association.——At the annual meeting of the American Society of Clinical Investigation, May 3, Atlantic City, N. J., Dr. Eugene F. Du Bois, Cornell University Medical School, New York, was elected president, and Dr. Joseph T. Wearn, Boston City Hospital, Boston, secretary; the next annual meeting will be at Atlantic City, May 2, 1927.——At the annual meeting of the American Gastro-Enterological Association, Atlantic City, N. J., May 3-4, Dr. Franklin W. White, Boston, was elected president, and Dr. John Bryant, 338 Marlborough Street, Boston, secretary; the next annual meeting will be at Atlantic City, May 2-3, 1927.

Homicides in 1925.—In continental United States in 1925 there were about 10,100 homicides, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company, which is fourteen times the number that would have occurred if the homicide rate of England and Wales had prevailed in this country, and six times as many as would have occurred had the homicide rate of Canada prevailed. The *Bulletin* says that in a recent year the city of Chicago alone had more than twice the number of homicides that occurred in all England and Wales. The Metropolitan Insurance Company has endeavored to discover what legal action is taken when homicides occur among its own policyholders, and has facts available in 611 homicides which occurred in 1922-1924. Deducting eighty-six "justifiable" homicides, there were 525 assailants answerable to the law; of these fifty-four committed suicide and thirteen died before they were arraigned; of the remaining 458 assailants, eighty-four had not been captured within a year after the crime was committed, and of the 374 who were apprehended, 108 were released by grand juries or magistrates, as no case could be made out against them; eight were declared insane. There were actually brought to trial 258 or 56.3 per cent of the original group of 458, and of these, 187 were found guilty, 170 being sentenced to prison, eight sentenced to death, and nine released either by a fine or on a suspended sentence.

Women's Organizations Fight for Sheppard-Towner Act.—Concentrated efforts are being made by women's national organizations throughout the country to have the Senate reject the amendment of the Senate Committee on Education and Labor to reduce the time for extension of the Sheppard-Towner Infancy and Maternity Law. The Senate committee recognized the objections made by the medical profession against the principles involved in the Sheppard-Towner Law and, in its report to the Senate, insisted that the expenditure by the federal government of more than a million dollars each year in this work should terminate, June 30, 1928. The committee further recommended that no federal funds should after that date be made available for the states to carry on this work under the arrangements in the law requiring a state to match or appropriate an equal sum from state funds to that appropriated by the federal government. This unanimous action of the Senate committee is in direct accord with the attitude of The Journal and of the medical profession generally throughout the country.

No less than ten women's organizations have pooled their interests in a national campaign of propaganda to defeat the amendment of the Senate committee. These national women's organizations include the National Board Y. W. C. A., National Council of Jewish Women, National Consumer's League, National Association of Colored Women, National Council of Women, General Federation of Women's Clubs, National League of Women Voters, American Association of University Women, National Women's Trade Union League, National Congress of Parent-Teachers, and Women's Christian Temperance Union.

Members of the Senate are receiving hundreds of letters and telegrams as a result of this combined offensive of these women's organizations. It may be that the amendment of the committee will be imperiled as a result of the political influence thus brought to bear on members of the Senate. Diligent inquiry made of various senators does not disclose the fact that physicians have written or telegraphed their senators urging that the Senate committee amendments be adopted when the bill comes before the Senate for final action. Unless senators are informed of the request of the medical profession that this amendment be retained, it is quite probable that the committee will not be able to muster enough votes in the Senate to retain the amendment in the bill in its final passage.

CANADA

Association for Study of Feebleminded.—The fiftieth annual meeting of the American Association for the Study of the Feebleminded will be held in Toronto, June 3-5, at the King Edward Hotel. The prime minister of Ontario and the mayor of Toronto will deliver addresses of welcome. Among others, Dr. Thomas J. Heldt, of the neuropsychiatric division of the Henry Ford Hospital, Detroit, will speak on "The Neuropsychiatric Importance of the Personality Reactions of Mental Defectives"; Charles B. Davenport, Ph.D., director, department of eugenics, Carnegie Institute of Washington, Cold Spring Harbor, New York, "The Nature of Hereditary Mental Defect"; Dr. Groves B. Smith, Detroit, "Cerebral Accidents of Childhood—Their Relation to the Problems of Mental Deficiency," and Dr. George K. Pratt, of the National Committee for Mental Hygiene, on "The Application of Mental Hygiene Methods to the Feebleminded." The annual dinner will be held Friday evening, when the president of the association, Dr. Arthur R. T. Wylie, superintendent, Institution for Feebleminded, Grafton, N. D., will deliver his address.

FOREIGN

Ophthalmologic Congress.—The Oxford Ophthalmological Congress will meet at Keble College, Oxford, England, July 15-17; on Thursday the discussion will be on "Sympathetic Ophthalmia"; Friday the Doyne Memorial Lecture will be delivered by Dr. Thomas Henderson on the "Anatomy and Physiology of Accommodation in Mammalia." An afternoon will be devoted to demonstrations in the scientific and commercial museums.

British Association to Publish Another Journal.—The council of the British Medical Association at its April meeting decided to publish the *Journal of Neurology and Psychopathology* as and from the issue of May, 1926. This journal was started in 1920 to take the place of the former *Review of Neurology and Psychiatry*, which was published successfully from 1903 to 1918; under the auspices of the British Medical Association, the journal should find a larger sphere of usefulness. Dr. Samuel A. Kinnier Wilson is the chief editor. The journal will appear quarterly; orders (30s.) should be sent to the Financial Secretary, British Medical Association, Tavistock Square, London, W. C. 1.

Prize for General Practitioners.—The British Medical Association will award the first "Sir Charles Hastings Clinical Prize" of 50 guineas for general practitioners to Dr. Norman Porritt of Llandudno for his clinical study on "The Abdomen in Labor." The prize will be presented to Dr. Porritt at the annual meeting of the association in July at Nottingham. There were twenty clinical studies submitted by physicians for the prize this year. The council conveyed to Sir Humphry Rolleston and Prof. W. E. Dixon an expression of appreciation and gratitude for their report on the essays submitted for this prize. The competition is announced also for 1927, and the following conditions are imposed:

1. Any member of the association who is engaged in general practice is eligible to compete for the prize.
2. The work submitted must include personal observations and experience of the candidate collected in general practice, and a high order of excellence will be expected. If no essay entered is of sufficient merit, no award will be made.
3. Essays, or whatever form the candidate desires his work to take, must be sent to the Medical Secretary, British Medical Association House, Tavistock Square, London, W. C. 1, not later than Dec. 31, 1926, and the prize will be awarded at the annual general meeting of the association, to be held at Edingburgh in July, 1927.
4. If any question arises in reference to the eligibility of the candidate or the admissibility of his essay, the decision of the council on any such point shall be final.
5. Each essay must be distinguished by a motto, and must be accompanied by an envelop marked with the same motto, and including the candidate's name and address.
6. The candidate who gains the award shall, if the council so desires, publish his paper in the *British Medical Journal* or deliver a lecture on the subject thereof at a meeting of the association.

Personal.—The fiftieth professional anniversary has recently been celebrated by the emeritus professors, H. Vierordt, Tübingen; M. von Gruber, Munich, and P. Zweifel, Leipzig.——Prof. G. Hoppe-Seyler, Kiel, son of the founder of the *Zeitschrift für physiologische Chemie*, has been made emeritus professor, as also Prof. E. J. Moure, of the chair of ear, nose and throat diseases, Bordeaux. A souvenir medal is to be presented to the latter; Dr. Junca, cours d'Alsace-Lorraine, Bordeaux, is in charge of subscriptions for the purpose.——Prof. M. Couto, Rio de Janeiro, delivered an address on "Visceral Polysteatosis" at the Paris medical school recently, and he was the guest of honor, with Professor Austregesilo, at a banquet later.——Prof. F. Müller, Munich, surprised the recent German Internal Medicine Congress by his denunciation of the "overproduction of medical articles, the inability of the younger generation to condense their articles for publication, and the lack of rigorous discrimination by the editors in selecting articles to publish."——The medical secretary of the British Medical Association, Dr. Cox, who has been in South Africa for several months in the interests of the association, returned home, April 12. Of the 1,400 medical men in South Africa, Dr. Cox is said to have seen nearly 700 of them in groups of from three to seven; he is said to have done a great organizing work.——A complimentary dinner was given to Sir Robert Bolam by the council of the British Medical Association, April 7, in order to congratulate him on the honor recently conferred by the king.——The late Dr. J. Basil Hall, of Bradford, England, past president of the British Medical Association, left an estate valued at £29,823.

Government Services

Navy Orders

Lieut. Commdr. Richard H. Miller was placed on the retired list, April 10.——Lieut. Donald E. Dement has tendered his resignation from the medical corps.——Lieuts. William E. Crooks, Thomas L. Morrow, Robert H. Snowden, Charles E. Morse and John W. Vann have qualified for promotion to the rank of lieutant commander.——Lieut. Commdr. William Chambers on completion of a course of instruction at the Naval War College, Newport, R. I., will be transferred to the Bureau of Medicine and Surgery of the Navy Department, Washington, D. C., for duty.——Lieuts. William S. Leavenworth and William D. Davis, Medical Corps, U. S. Navy, have been found qualified for promotion to the rank of lieutenant commander.——Following the graduating exercises, May 1, at the Naval Medical School, Washington, D. C., Lieut. Comdr. Robert G. Davis, on completion of his course of instruction at the Massachusetts General Hospital, Boston, will be assigned to the Bureau of Medicine and Surgery, Navy Department, Washington, D. C.——Capt. Richmond C. Holcomb, now attached to the U. S. S. *Mercy*, has been assigned to represent the medical department of the navy at the Sesqui-Centennial Exposition, Philadelphia, which opens in June.——Comdr. Frank E. Sellers, Naval Hospital, Norfolk, Va., has been assigned to the U. S. S. *Tennessee*, and Comdr. Clarence F. Ely of the U. S. S. *Tennessee* has been assigned to the naval training station, Hampton Roads, Va.

Army Personals

The resignation of Capt. Luther H. Kice as an officer of the medical corps of the army was accepted, April 24, and that of Capt. Harold O. Brown was accepted, effective, May 10.——Edward R. Weidlein, M.A., director, Mellon Institute of Industrial Research, University of Pittsburgh, and R. A. Gortner of the University of Minnesota have been appointed research consultants in the chemical warfare service of the U. S. Army.——Dr. Melvin T. Means, Claremore, Okla., first lieutenant, medical reserve corps, has been appointed first lieutenant in the regular army medical corps with rank from Jan. 9, 1926; also Dr. Harold W. Kohl, Denver, with rank from January 27, and Dr. Fritjof H. Arestad, San Francisco, with rank from January 29.

Examination for Entrance Into U. S. Public Health Service

There will be examinations, July 12, held in Washington, D. C., Chicago, New Orleans and San Francisco for entrance into the regular corps of the U. S. Public Health Service. Candidates who successfully pass an oral, written and clinical examination before a board of medical officers, and who undergo a physical examination will be recommended for appointment in the service by the President. Candidates must be not less than 23 nor more than 32 years of age, and be graduates of some reputable medical college and have one year of hospital experience or two years of professional practice. Permission to take the examination may be obtained from the Surgeon General, U. S. Public Health Service, Washington, D. C.

President Signs Bill to Retire Nurses

The President has signed a bill for the retirement of army and navy nurses. The bill places army and navy nurses on the same status, with respect to retirement privileges, as has been heretofore allowed to commissioned officers of the army and navy. It provides that after twenty-five years' service, army and navy nurses will receive 75 per cent pay; or, after reaching the age of 50, with twenty years' service, retirement pay allowance shall be 60 per cent. The peace-time strength of the nurse corps in the army and navy is approximately 500 in each of the corps. During the war the number was raised in the army to 22,000 and in the navy to 1,500. May 14, in the office of Rear Admiral Edward R. Stitt, Surgeon General of the Navy, General Merritte W. Ireland, Surgeon General of the Army, presented the pen with which the President signed the bill to Miss Anna G. Davis, assistant superintendent of the navy nurse corps. The presentation was made in recognition of the work of Miss Davis in behalf of the passage of the bill.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 1, 1926.

The Coordination of Research Libraries

The Association of Special Libraries and Information Bureaus, which has grown out of the two conferences of persons engaged in handling special information, has been formally inaugurated. The objects are to examine, foster and coordinate the activities of special libraries, information bureaus and similar services; to act as a clearing house for these services; to develop the usefulness and efficiency of special libraries and information bureaus under whatever titles they may function; and, generally, to promote, whether by conferences, meetings or other means, the adequate dissemination of systematic published information. The first work of the association will be the preparation of a directory of special libraries and information bureaus in the United Kingdom. This work, which is to be financed by the Carnegie United Kingdom Trustees, is estimated to cost about $10,000. It is hoped to arrange for mutual cooperation and assistance between institutions such as commercial houses, manufacturing concerns, newspapers, banks and insurance offices, technical and scientific societies and political, social and educational organizations, and the staffs concerned, in order to develop to the utmost the effective use of existing collections in national, public and special libraries. It is proposed to admit ordinary members and associate members at subscriptions of $10 and $5, respectively. The subscriptions will be the same for individuals as for institutions, but the committee desires that membership shall be institutional rather than individual. The association wishes to establish free trade in published information, but there will be no obligation on any librarian to supply information which he feels he is not justified in giving.

Marriage and Hereditary Deafness

That persons who are afflicted with hereditary deafness should not marry each other was one of the dicta laid down by Dr. R. Scott Stevenson in a lecture at the Institute of Hygiene. Deafness he thought more serious than blindness, for while a blind child could be educated at the ordinary schools, a deaf child could not be educated with normal children. Heredity as a cause of deafness was rather a thorny subject. Congenital syphilis was a common cause among children of the poorer classes, but it was impossible to deal with the prevention of syphilis until its notification and treatment were made compulsory. There was, however, a common form of hereditary deafness that had no relation whatever to syphilis. To prevent this type it was necessary to take a long view and to lay down the law that persons should not marry one another at all if affected by hereditary deafness, and that it would be better if these did not marry with persons with deaf relatives. It was a curious fact that the deaf tended to marry the deaf, presumably because the bond of their mutual affliction tended to bring them together, and because of the ease with which they communicated with each other.

An Airplane Medical Service

Australia may be the first country to institute a regular service of flying physicians and dentists. The national commission on health is considering a scheme by which the airplane mail lines might assist in bringing rapid medical aid to any one dangerously ill in the remote bush areas. The Australian inland mission of the League of Red Cross Societies is seeking to install a simple, standard wireless apparatus that may be worked effectively by any nontechnical possessor in the "black blocks." The railways in the six Australian colonies tap scarcely more than the eastern and southern coastal strips of a territory roughly as big as the United States, and physicians at present have to do much of their diagnosis and treatment by telegraph. Often the sick person has many miles to travel to reach a telegraph station from which he can solicit skilled advice. When he has related the symptoms and the physician has prescribed as best he can, the patient has next to find a center possessing a medicine chest. Standard drugs and simple surgical appliances are kept at the scattered repair posts and police stations, and having arrived at one of these, the sick man follows the physician's orders to the best of his intelligence. Many perplexing cases need personal examination for proper treatment, and the inland mission is mapping out districts in central Australia that could be served by physicians transported by air over areas with radii of 200 miles. A system of filling stations may be devised still further to increase the range of the flying physician.

Proposed International Society of Medical Practitioners

At a meeting of the Federal Committee of the British Medical Association in Australia, the honorary secretary read a letter from the medical secretary of the British Medical Association, intimating that at the time the new headquarters in Tavistock Square were opened, five delegates of foreign medical organizations had met informally in his office to discuss the proposal to inaugurate an international society of medical practitioners. As a result, a letter of invitation was drawn up by Dr. F. Decourt and sent to the presidents and secretaries of representative medical organizations in various countries. The object of the proposed society is to serve as an international bureau of information on matters affecting medical practice in any country. The organization would be an inexpensive one, since it would be unnecessary to appoint a council or committee. All that would be required would be a secretary and a small clerical staff in a properly equipped office.

Fatal Septicemia from Performing a Postmortem Examination

In previous letters, two cases were recently reported in which young physicians lost their lives in performing postmortem examinations. In the following case a man, only 22, of great promise, came to a similar end. He took an examination in pathology, March 18. As the youth had come without rubber gloves, the professor lent him a pair. They were perfectly sound, but after the examination the professor learned that they had been torn. He made no mention of injury. The young man was admitted to the hospital, March 22; the third finger of the left hand was incised. Despite treatment he became progressively worse, and died from septicemia, probably resulting from an injury he received while making a postmortem examination.

Arsenic on American Apples

The finding of arsenic in dangerous quantities on American apples has had a disastrous effect on their sale in the English market. The difficulty with American apples is the necessity for late spraying. There are three broods of the codling moth, and in order to destroy the pest American growers have been obliged to spray the trees when the fruit is fully formed. At home we spray only before the flower appears, and again immediately after the petals have fallen. The practice is stated to be similar with Australian growers, who find no need to spray after the apples have formed. Before the next season for American apples begins it is considered probable that some arrangement will be made, perhaps by extensive washing in the particularly dry belts which are most susceptible to contamination, to guarantee the crops to be free from arsenic. Canadian growers, many of whom have been as much affected by the scare as those in the United States, are already considering whether late spraying should not be altogether prohibited.

The British Medical Association and Nursing Homes

Evidence was given on behalf of the British Medical Association before a select committee of the house of commons, which is taking evidence on the desirability or otherwise of nursing homes being subjected to registration and inspection. The attitude of the association was stated to be that, while it was not against registration of nursing homes in principle, it was opposed to some of the provisions in the bill before parliament. It suggested that local authorities should set up special committees on which the medical profession should be represented, either by cooption or by appointment, and urged that the case sheets of patients should not be accessible to any but physicians. The association contended that no nursing-homes run by physicians should be subject to registration, nor should those attached to, or associated with, voluntary hospitals. In the case of nursing homes run by private individuals for profit, there was no control and no responsibility by any one.

The Australian Aborigines: Proposed Model Native State

A petition has been circulated among state and federal members of parliament by Colonel Genders, the originator and secretary of the South Australian movement for the creation of a large model aboriginal state in central Australia. The movement has for its object the saving of the race, which is disappearing before the advance of pastoral settlement and railway penetration, both of which seriously diminish the natural food resources of the natives. The petition urges that the model state should be eventually managed by a native tribunal with a native administrator, and have representation in the federal parliament, similar to that of the Maoris, for it is now acknowledged that the Australian blacks have considerable mental development, and are capable of learning industries. Cannibalism and cruel rites would be prohibited, but otherwise native laws and customs would operate, and whites would not be allowed to enter the model state unless duly accredited.

The Cancer Review

At a meeting of the British Empire Cancer Campaign, it was announced that the first number of a publication to be known as the *Cancer Review* of the campaign would be issued during May and would continue thereafter as a monthly publication. It would embrace monthly reports of all cancer research work being carried out throughout the world, in abstract form, and would, it was hoped, effectively link up the work of all cancer researchers.

The Prevention of Accidents

The second annual meeting of the National "Safety First" Association has been held. The home secretary, Sir William Joynson-Hicks, presided. He said that the association had made wonderful progress, particularly on the public safety side. The number of street accidents reported emphasized the need for their activities. For 1925 they were 115,473, or 17,000 more than in 1924. Fatal accidents reached nearly 4,000; 340 more than in 1924. Last year, on the average, more than ten persons were killed, and more than 300 injured, every single day on our roads. In London, however, there were twenty fewer street fatalities than in 1924. In the areas covered by their branches there had been a net decrease of fifteen in the number killed, as compared with 1924.

With reference to the industrial side of the movement, he assured the meeting of the warm support of the government. But in spite of everything that they could do in making regulations for the safety of factory organization, they would still have a majority of accidents in the country which could not be touched by regulations. The thoughtlessness of the human factor caused more than half of the accidents in our industrial organizations, and it was the human factor that they must endeavor to educate.

Sir Herbert Blain, vice president, said that during every year 750,000 people were killed or injured by accidents in this country. For the five years that had succeeded the war there were 200,000 more British people injured than there were wounded in the war itself. Those were enormous figures, and when it was realized that 75 per cent of the accidents were preventable by a little care and forethought, he believed it would be felt that the association was endeavoring to do work that was for the good of the community as a whole.

ITALY

(From Our Regular Correspondent)

March 31, 1926.

A Graduate Course in Physiotherapy

At the University of Naples, an advanced course in hydrology, electroradiology and physiotherapy was organized this year. The course is intended for physicians and graduates in chemistry and pharmacy, and more particularly for those who intend to practice medicine in sanatoriums located at mineral springs, either as physiotherapeutists or as public health officers.

Annual Meeting of the Italian Hydrologic Society

The Associazione medica idrologica italiana held its customary annual general assembly under the chairmanship of Professor Devoto, the president of the society, and Professor Piccinini, regional president of the Sezione alta Italia.

Course in Hygiene and Infant Welfare

The course in hygiene and infant welfare, the fifth to be held, was begun last month at Rome in the E. Maraini Preventorium, under the auspices of the Italian Red Cross and under the direction of Professor Valagussa.

Congress on Industrial Medicine

The Congress on Medicina del Lavoro, or Industrial Medicine, will be held at Genoa, October 12-15, and, for the first time, will be organized by the Scuola d'igiene sociale, established by the commune of Genoa in 1922. The president and secretary of the executive commitee are, respectively, Professor Ramoino and Dr. Crosa. The topics on the program are: (1) The individual conditions and changes in the organs of persons suffering from electric shock; (2) condition of health of Italian emigrants who return home; (3) vocational guidance from the medical, industrial and operative points of view; (4) microchemical and biologic reactions in relation to the industries, and (5) the workshop from the hygienic point of view.

The Prophylaxis of Smallpox

The minister of the interior is establishing more efficient prophylaxis against smallpox, and is creating registration places for the first vaccination and revaccination. In localities in which the service has not been rigorously conducted, an investigation will be instituted.

The Provincial Antituberculosis Societies

Antituberculosis societies have now been created in almost all the Italian provinces. The minister of the interior has set forth the duties of the societies. Their activities should be sustained, and, when necessary, given financial aid, by the provincial administrations. As campaign centers, the societies are urged, above all, to organize antituberculosis dispensaries, which ferret out tuberculous patients, assist them, and inform them of the institutions where they may receive aid. The work of the dispensary should be supplemented by that of visiting nurses who go to the homes and the working places of the sick. For the recovery of patients the societies should endeavor to have available a sufficient number of beds in care-taking centers. At the same time, the societies should promote preventive and prophylactic work. The establishment of homes for infants, permanent rural colonies, open-air schools, work and school colonies, and the placement of predisposed infants, carefully selected, in healthy rural families (the Grancher system), will aid in the accomplishment of the ends desired. The societies should give particular care to sanitation in the home, and should promote the construction of sanitary dwellings for the working classes. Finally, a publicity campaign should be launched for the education of the masses in hygiene by means of motion pictures, lectures, tracts, and by the establishment of an "antituberculosis day" and of a "flower festival."

The Centenary of Francesco Redi

February 18, was celebrated the tercentenary of Francesco Redi—physician, poet and naturalist—who remains today one of the most typical prototypes of Italian science of the seventeenth century. Physician to the grandducal court of Florence, his views, as handed down by contemporaries, show him to have been a keen observer and an excellent diagnostician. He was the first to demonstrate that the venom of snakes is not active if administered by the gastric route. He asserted the therapeutic value of quinine against the opinions of physicians of his time. He taught that simplicity in therapy is a precious quality, and many of his recommendations are applicable today.

BUENOS AIRES

(From Our Regular Correspondent)

March 29, 1926.

Antivivisection Propaganda

The Association for the Prevention of Cruelty to Animals intends to ask for the passage of a law limiting vivisection. Its reports show complete ignorance of working methods of biologic laboratories; for instance, of the fact that anesthesia is employed in all experiments, and that strict surgical technic is applied when survival of the subject is expected. One of the views advanced is that the only experiments justified are those intended to determine some unknown or doubtful question, since after certain knowledge is acquired, repetition of the experiment involved is merely cruel or abusive. This demonstrates absolute disregard of the fact that a question is never closed and that experimental work is essential for medical teaching. Let us hope that this new campaign will not harm scientific research.

Assault on a Professor

The agitation that gradually has spread among university students, since they secured an electoral share in university management, has reached such extremes that some undergraduates, especially the most inefficient ones, devote practically all their time to school politics. The many concessions of the governing bodies have been dexterously exploited by the students, who now can present themselves for examination every three months, and any number of times. Many of them have thus been rejected as many as ten consecutive times. Until a short time ago, the third (and then the fourth) failure automatically caused dismissal of the student. Of late, however, those failing seem to blame the examining board for their misfortune. In the last four or five years, the custom has prevailed of sending offensive or threatening anonymous letters to any professor who fails students. Such conditions reached a climax when Prof. B. A. Houssay was hit from behind with an iron bar. In addition to a wound in the temporal region, a fracture of the right hand was caused. An inquiry showed that the crime had been instigated by a 40 year old student, who had been held back several times, who has a police record, and who has been connected with several disturbances in the medical school. This outrage caused indignation among both the teaching staff and the student body. The faculty members signed a protest, and disciplinary measures are expected on the part of the dean and governing board.

Hospital Enlargement

The new buildings of the Salaberry Hospital, on which the city authorities have spent 4,000,000 pesos (about $1,600,000), have just been opened. The new services include surgery, obstetrics and gynecology, pediatrics, administration and dietetics. The new orthopedic, laryngology and ophthalmology departments, and the morgue and kitchen pavilions, of the Pirovano Hospital will be finished next month. The cost will be 800,000 pesos (about $320,000). April 12, the Rawson Hospital, after a complete reconstruction, will be thrown open to the public. This hospital will have 1,800 beds, one of the largest hospitals here.

Personal

Prof. G. Fichera of Pavia has taken charge of a surgical pathology class, under Prof. Arce.——Dr. A. Ceballos, assistant professor of clinical surgery, has gone to the United States, to study conditions there, and present his arthroplasty work.——Prof. M. R. Castex has given a number of lectures in Germany and has met with a favorable reception.——The following have just returned from Europe: Dr. E. Hug, after completing some studies in physiology at Turin and Berlin; Dr. G. A. Castaño, assistant professor of gynecology; Dr. E. Mariño, assistant professor of medical pathology, and Dr. Inda, who took a course in epidemiology at Hamburg.

VIENNA

(From Our Regular Correspondent)

April 13, 1926.

The Retirement of Professors Riehl and Dimmer

With the end of the summer semester, the so-called *Ehrenjahr*, or honor year, which was granted Professor Riehl the director of the First Dermatologic Clinic at the University of Vienna, comes to a close. Professor Riehl is past 70 years old, and is compelled by the law requiring retirement of university professors at the age of 70 to give up his post. His enforced resignation awakens many regrets that the retirement law should prevent such eminent men as Riehl from continuing their activities. The situation is made worse by the fact that the natural successor to Riehl, the Vienna dermatologist Professor Kyrle, died, some time ago, quite unexpectedly. Concerning the fate of the First Eye Clinic, of which Prof. Dr. Dimmer, recently deceased, was the director, no definite action has been taken as yet. At first it was reported that for economic reasons the clinic was to be closed. However, the united protest of academic circles, and certain keen-sighted government officials, succeeded in frustrating any such designs. Scarcity of funds, however, makes difficult the execution of plans.

Care of the Tuberculous in Austria

In a recent number of the official *Mitteilungen des Volksgesundheitsamtes*, there appeared a report, edited by Dr. Eisenschimmel and Director Lukesch, on the present status of the tuberculosis care-taking centers in Austria, and giving an account of their activities in 1925. The report reveals that there are only fifty-nine tuberculosis care-taking centers in operation. These serve only one fifth of the territory to be covered, and provide for approximately half of the total population. Each center must care, on the average, for about 62,000 persons. During 1925 more than 1,500,000 persons appeared at the centers for consultation. Of new patients, 11 per cent, or 3,279, proved to be seriously ill. One of the chief tasks undertaken by the care-taking centers was to minimize the spread of infection. As high as 70 per cent of the members of families exposed have been found to be tuberculous. Nurses of the care-taking centers found that of 5,294 cases the patient shared his bed in 2,836 cases with other adults and in 2,458 cases with children. In more than 40 per cent of the cases, there were, besides the patient, three constant occupants of the living room; in 23 per cent of the cases, there were four other occupants, and in only 7 per cent was the patient associated with only one other person. In 8 per cent of the cases, the dwelling consisted of more than two rooms; in 35 per cent, of two rooms; in 46 per cent of only one room, and in 11 per cent, two or three families lived in one room. By the efforts of the care-taking centers, 7,648 patients were provided beds in institutions in which they received medical treatment; 3,763 were placed in homes for convalescents, and 28,942 persons were examined or assisted.

The Sanitary Conditions of Vienna, Winter of 1925-1926

Health conditions in the capital for October to March were favorable up to about the middle of February. The weather was cold and dry during December and January. In February, an epidemic of influenza set in. There was, therefore, an increase of mortality in March, which is still observable in April.

The Value of the Bacteriologic Examination in Trachoma

At a recent session of the Vienna Ophthalmologic Society, Dr. Pillat presented a paper in which he discussed his microscopic researches in thirty-eight cases looking toward clarification of the diagnosis of trachoma. The difficulty of differentiating conjunctivitis follicularis from trachoma by clinical methods alone should give the bacteriologic examination greater importance. During an epidemic, Pillat observed among 200 children examined fifty-eight suspicious cases, in thirty-eight of which he made microscopic examinations. Of these, thirty-five, or 92 per cent, showed typical trachoma inclusions, whereas three cases in which the clinical manifestations pointed to trachoma showed no cell inclusions. Clinically, the thirty-eight positive cases were, in part, moderate and, in part, very mild, so that it was impossible to differentiate them otherwise from ordinary cases of follicular catarrh. Follicles were present in almost all of them; in 88 per cent, the conjunctiva bulbi was not affected, the cornea was never involved, and the secretion was slight. In four cases, the inclusion bodies were exceedingly numerous; in thirteen cases, there were from ten to forty inclusion bodies; in ten cases from two to ten, and in seven cases only one inclusion body. In fourteen cases, several (as high as six) preparations had to be prepared.

BELGIUM

(From Our Regular Correspondent)

April 29, 1926.

The New Law Pertaining to Occupational Diseases

A new type of service in factories has been organized, which is intended more particularly for industries in which toxic substances such as lead and zinc are handled. It includes the installation of sanitary equipment and supplies, and a complete medical service. No charge will be made for the use of the equipment. The heads of industries will entrust the regular inspection of employees and the sanitary equipment of their factories to physicians approved by the minister of labor. They will keep a register showing the names of workmen who have been absent on account of sickness; also the dates and the duration of such absences. The physicians will inspect the sanitary condition of the factory equipment at least once a month. They will question (without compelling them to leave their posts) those workmen who appear to be failing in health. After each of their inspections, the physicians will make a written report of observations in special registers, but will exclude information involving professional secrecy. On their general visits, the physicians will examine more particularly: (1) workmen who present symptoms that may be due to occupational disease; (2) workmen who show recurrence of such symptoms in two months after the symptoms have been made to disappear; (3) workmen who have been absent from work on account of sickness, since the last visit of the physician; (4) workmen whose health appears doubtful, and (5) workmen who request such examination. They will record their findings on cards to be supplied by the heads of industry. The employers will, through their physicians, institute a general revision of the personnel of their establishments whenever they are requested so to do by the chief inspector of mines, or by the medical inspector of labor. The employers or managers will pay all the costs of medical inspections, and deductions will not be made from the wages of workmen for loss of time incurred by such inspections. Records will be preserved for at least five years. The registers will be open to examination by government inspectors charged with the execution of the law.

The law contains also provisions pertaining to general hygiene and industrial organization. For the better taking of samples of fumes and residual gases, shuttered openings will be provided at easily accessible points in the walls of chimneys or other conduits for the evacuation of fumes. Devices will be installed to carry off fumes, to dilute the gases thrown off by the ovens, and, as far as possible, to effect the condensation of harmful material.

Welfare Work in the Belgian Congo

The Union coloniale belge has responded to the appeal of the colonial minister and has organized special courses on the prophylaxis of malaria and trypanosomiasis. The directors of the great enterprises concerned have supported the initiative of the Union coloniale belge, and have required all their agents to take part in the course. The movement is one of the surest means of accomplishing results in the crusade against tropical diseases.

A New Publication

A new monthly review that has been launched in Belgium is called the M. I. L. review and deals with the financial interests of the medical profession. The device of the new publication is: *nummis potiri quam servare facilius* (it is easier to make money than it is to keep it).

The Sterilization of Criminals

Before the Société belge de médecine légale, M. Vervaeck discussed recently the question of sterilization of certain criminals. Sterilization has been advised in cases of hereditary mental disease (dementia praecox, cyclothymia), in the markedly weak-minded (sterilization before puberty); in psychopaths, constitutional epileptics; in incurable toxicomania, and sexual perverts. In all these cases, our knowledge is not sufficiently exact to justify sterilization.

The Queen Elizabeth Foundation

The Queen Elizabeth Foundation is the realization of a project which had its beginning during the war. The queen had observed that the hospitals on the Belgian front were, in truth, medical schools. She expressed the desire that, at the conclusion of the war, there might be founded in Belgium a medical institute in which the activities of the hospitals of the Belgian front might be continued. Such an institute was conceived of as a combination of hospital services and research laboratories. By creating laboratories of all the auxiliary sciences of therapeutics, and by inviting all those interested in research and in new methods to attend the institute, all resources of science could be mobilized against disease. With the collaboration of the Rockefeller Foundation, the laboratories of the queen have been installed temporarily in the hospitals of Brussels under the directorship of Professor Nolf.

BERLIN

(From Our Regular Correspondent)

April 10, 1926.

Industrial Diseases in Relation to Accident Insurance

A decree issued by the federal government, July 1, 1925, provides that not only industrial accidents shall come under federal accident insurance but also such affections as develop owing to industrial injuries and which extend over long periods and are almost imperceptibly cumulative. Advances in medical knowledge of the last decade have furnished the bases for decisions as to the significance and the origin of many occupational diseases. The decree, however, concerns only such industries as come within the scope of federal industrial accident insurance. The new insurance extends, furthermore, only to the diseases that are enumerated in the decree. References to these diseases in the decree are entirely general; for example, we read that industries in which "affections caused by lead, phosphorus, mercury, arsenic, benzene, carbon disulphide, roentgen rays and other forms of radiant energy occur" are compensatable industries. Although such comprehensive designations may open the way to controversy, on the other hand, trade unions and the courts can adapt themselves to changing views of medical science. The connection of an affection with employment in a recognized industry must be shown. The insurance bureau must in all cases have the person who is ill examined by a suitable physician. The decree introduces the so-called *Uebergangsrente*, or temporary benefit. In many of the dangerous industries, the workmen must subject themselves to periodic medical examination. If an insured workman shows signs of an incipient industrial disease, continuance in his employment is often hazardous. However, the workman may not be able to give up this work, for financial reasons. In such cases, the employer may be expected to grant the workman a temporary benefit up to half the amount of the full benefit, on condition that he consent to give up his dangerous employment.

Proposed State Aid for Hospital Patients

The lack of hospital beds in Berlin, and the decreasing number of paying patients in hospitals, have brought up the question of possible changes in hospital provisions for patients of limited means. Professor Gottstein suggested, in a recent address, charging the patients, including those insured in the *Krankenkassen*, for board and room only, and imposing the remaining charges on the city. Gottstein added that, under such a provision, private charitable institutions would have to be protected in some way. Dr. Goldmann suggested that to care for patients who do not need the expensive equipment of the modern hospital, "mild patients hospitals" and caretaking homes might be erected. Goldmann demands further extension of the domiciliary care of patients, a form of service which heretofore has been in the hands of private welfare societies. The domiciliary care of patients relieves greatly the demands on the hospitals. Evidence of the popularity of domiciliary care supplied by the state is furnished by the facts that in 1925 the Evangelisch-Kirchliche Hilfsverband (auxiliary of the Protestant churches) provided domiciliary care for 27,000 patients and the Katholische Charitas-Verband similar care for 34,000 patients in Berlin. In the discussion that followed, objections were raised to Gottstein's demands on the grounds that the cost would be too great.

Marriages

Rolla L. McCreery, Torrington, Wyo., to Mrs. Frances Ramsey of San Francisco, at Sidney, recently.

Albert B. Murphy, Everett, Wash., to Miss Vesta Kruse of Rochester, Minn., at Ellensburg, recently.

Henry G. Mealing to Miss Lillie May Glover both of Augusta, Ga., March 21.

Deaths

Charles Edward Elliott, Victor, Colo.; University of Vermont College of Medicine, Burlington, 1888; University of Bishop College Faculty of Medicine, Montreal, Que., Canada, 1889; member of the Colorado State Medical Society; for many years mayor of Victor; member of the state legislature; served during the World War; aged 60; died, April 18, of pneumonia.

George Augustus Peck ⊕ New Rochelle, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1891; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons, and of the American Urological Association; on the staff of the New Rochelle Hospital; aged 59; died, April 23, at Milan, Italy.

John Joseph Mahoney, Jamestown, N. Y.; Niagara University Medical Department, Buffalo, 1896; member of the Medical Society of the State of New York; for twenty years superintendent of public health of Jamestown and for twelve years district state sanitary supervisor; aged 57; died, April 18, of heart disease.

Franklin Freese Lehman, Sandusky, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1891; member of the Ohio State Medical Association; past president of the Erie County Medical Society; for several years county coroner; aged 64; died, April 23, of chronic myocarditis and arteriosclerosis.

Charles Lawrence Orr, Pratts Fork, Ohio; Physio-Medical College of Indiana, Indianapolis, 1891; member of the Ohio State Medical Association; aged 56; died, April 29, at the Athens (Ohio) State Hospital, of cerebral hemorrhage.

Lewis W. Flinn, Wilmington, Del.; Jefferson Medical College of Philadelphia, 1883; Hahnemann Medical College and Hospital of Philadelphia, 1887; on the staff of the Homeopathic Hospital; aged 67; died, April 4, of heart disease.

Lanta Weirick Ford, Syracuse, Ind.; Medical College of Indiana, Indianapolis, 1901; member of the Indiana State Medical Association; aged 51; died, April 9, at the Elkhart (Ind.) General Hospital, of nephritis.

Joseph Howard Langworthy, Leavenworth, Kan.; University of Pennsylvania School of Medicine, Philadelphia, 1907; served during the World War; aged 46; died, March 30, of thrombosis of the coronary arteries.

James Crawford Watson, Georgiana, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1898; member of the Medical Association of the State of Alabama; aged 50; died, March 15, of acute nephritis.

Willard S. Cushman ⊕ Baton Rouge, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1900; for fourteen years parish coroner; aged 50; died, March 6, of chronic nephritis.

Emory Hale Connelly, Alberta, Va.; University College of Medicine, Richmond, 1905; member of the Medical Society of Virginia; aged 43; died, March 18, of hemorrhage due to a self-inflicted wound.

Herman Nathaniel Cohen ⊕ New Albion, Iowa; Barnes Medical College, St. Louis, 1908; superintendent of the New Albion Hospital, where he died, March 27, of chronic nephritis, aged 38.

William Edward Whitford, De Peyster, N. Y.; University of Vermont College of Medicine, Burlington, 1878; aged 70; died, March 27, at the Hepburn Hospital, Ogdensburg, of heart disease.

Ulysses Augustus Rice, Des Moines, Iowa; King Eclectic Medical College, Des Moines, 1888; aged 82; died, April 10, at the Methodist Hospital of hypertension and cerebral hemorrhage.

Charles Henry Moore ⊕ Albany, N. Y.; Albany Medical College, 1887; on the staffs of the Child's, Albany and St. Margaret's hospitals; aged 68; died, February 13, of chronic myocarditis.

Augustus Francis Schafer ⊕ San Francisco; Bellevue Hospital Medical College, New York, 1887; aged 61; died, April 29, at the Stanford Hospital, of carcinoma of the stomach.

Alexander R. Shadden, San Augustine, Texas; Vanderbilt University Medical Department, Nashville, Tenn., 1892; Confederate veteran; aged 76; died in April, of chronic bronchitis.

Harold Edwards Bates, Portland, Ore.; Johns Hopkins University Medical Department, Baltimore, 1915; served during the World War; aged 37; died, March 30, of tuberculosis.

William Cady Fawdrey, Lorraine, N. Y.; Albany Medical College, 1885; member of the Medical Society of the State of New York; aged 65; died, April 21, of erysipelas.

Fred B. McGarvey ⊕ Cavour, S. D.; University of Tennessee College of Medicine, Memphis, 1900; aged 57; died, March 19, at Highmore, of pulmonary tuberculosis.

Nathaniel Saenger, St. Louis; Missouri Medical College, St. Louis, 1895; served during the World War; aged 53; died, April 28, of melanosarcoma of the scalp.

August Ferdinand Schoen, Mayville, Wis.; Rush Medical College, Chicago, 1883; aged 75; died, March 2, at the Beaver Dam (Wis.) Hospital, of senility.

Ellen Eastman Schenck, Ashby, Mass.; Boston University School of Medicine, 1880; aged 70; died, April 19, at a hospital in Luenburg, of paralysis agitans.

Stephen M. Applewhite, San Antonio, Texas; Medical Department University of Louisiana, New Orleans, 1875; aged 73; died, March 2, of pneumonia.

Alfred M. Michaelis, New York; Cornell University Medical College, New York, 1925; intern, Mount Sinai Hospital; aged 24; died, April 24, of septicemia.

Harry Neville Goff, San Diego, Calif.; McGill University Faculty of Medicine, Montreal, Que., 1893; aged 66; died suddenly, April 6, of heart disease.

Sterling P. Stowers, North Kansas City, Mo.; St. Louis College of Physicians and Surgeons, 1889; aged 64; died, April 21, at Sedalia, of pneumonia.

Alexander T. King, Milwaukee; Chicago Medical College, 1881; member of the Colorado State Medical Society; aged 74; died, March 29, of pneumonia.

James Aloysius Dardas, Bay City, Mich.; Northwestern University Medical School, Chicago, 1909; aged 42; died, April 19, of cerebral hemorrhage.

Charles McKenzie Hay, Atlantic City, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1888; aged 59; died, March 8, of influenza.

John H. Crowe ⊕ Virginia, Minn.; Rush Medical College, Chicago, 1901; for twelve years city health officer; aged 58; died, April 17, at Minneapolis.

Hamilton Rush Riddle, Mechanicsburg, Ill.; Rush Medical College, Chicago, 1873; Civil War veteran; aged 84; died, April 17, of bronchopneumonia.

John Desmoines Cleveland, Merrill, Ore.; Northwestern Medical College, St. Joseph, 1892; aged 66; died, March 1, of injuries received in a fall.

George Miller, Richwood, Ohio; Cincinnati College of Medicine and Surgery, 1873; aged 78; died, April 26, at his home in Byhalia, of senility.

James McManus, Lindley, N. Y.; College of Physicians and Surgeons, Baltimore, 1885; aged 66; died, January 5, of pulmonary tuberculosis.

John S. Jordan, Indianapolis; Indiana Eclectic Medical College, Indianapolis, 1887; Civil War veteran; aged 80; died, April 17, of heart disease.

Frank M. Baldwin, Columbus, Ohio; Eclectic Medical Institute, Cincinnati, 1888; formerly a druggist; aged 83; died April 21, of senility.

Herman Goodman, Chicago; University of Berlin, Germany, 1881; aged 70; died, April 1, of chronic interstitial nephritis and myocarditis.

Thomas V. Cahall, Frederica, Del.; Jefferson Medical College of Philadelphia, 1874; aged 74; died, March 14, of cerebral hemorrhage.

Thomas J. McGowen, Vincennes, Ind.; Bellevue Hospital Medical College, New York, 1882; aged 72; died, April 16, of cerebral hemorrhage.

H. E. Keller, Decatur, Ind.; Curtis Physio-Medical Institute, Marion, Ind., 1894; aged 52; died, February 22, of carcinoma of the stomach.

Felix Kalacinski ⊕ Chicago; College of Physicians and Surgeons, Chicago, 1898; aged 52; died, April 15, of carcinoma of the liver.

George D. Lain ⊕ Sanger, Texas; University of Louisville (Ky.) School of Medicine, 1892; aged 64; died, April 18, of heart disease.

Baron D. Bishop, Monticello, Miss. (licensed, Mississippi, 1882); for many years member of the school board; aged 74; died, March 30.

James H. F. Prentiss, Gary, Ind.; American Medical College, Indianapolis, 1896; aged 67; died, April 18, at St. Mary's Mercy Hospital.

Peyton Smith Pope, Benton, Ill.; University of Tennessee College of Medicine, Memphis, 1877; aged 75; died, in April, of pneumonia.

John Shibley, Gentry, Ark.; Rush Medical College, Chicago, 1886; aged 77; died recently, of hemorrhage, due to gastric ulcer.

E. W. Davis, Lavaca, Ark.; Memphis Hospital Medical College, 1901; aged 57; died, February 1, of carcinoma of the stomach.

James J. A. Edwards, Yeager, Okla.; University of Tennessee College of Medicine, Memphis, 1891; died recently, of paralysis.

George W. Crapo ⊕ Terre Haute, Ind.; Medical College of Ohio, Cincinnati, 1875; aged 73; died, April 23, of cerebral hemorrhage.

Oscar Emmett Gourley, Bado, Mo.; Northwestern Medical College, St. Joseph, 1890; aged 61; died, April 16, of pneumonia.

Megerdich Attarian, Suffern, N. Y.; Medical Department of the University of the City of New York, 1885; aged 72; died, March 11.

James W. Parker ⊕ Gray, Ky.; University of Louisville School of Medicine, 1894; aged 58; died, April 21, of nephritis.

Newton R. Baldwin, Coldwater, Mich.; University of Michigan Medical School, Ann Arbor, 1875; aged 73; died, April 20.

Robert G. Davis ⊕ Hot Springs National Park, Ark.; Jefferson Medical College of Philadelphia, 1901; aged 54; died, April 9.

Patrick Jerome Flynn, Plattsmouth, Neb.; Creighton Medical College, Omaha, 1899; aged 51; died, April 6, of pernicious anemia.

Fleming L. Phillips, Portageville, Mo.; University of Louisville School of Medicine, 1892; aged 55; was shot and killed, May 1.

William Robert Peters ⊕ Stanton, Neb.; Rush Medical College, Chicago, 1904; aged 49; died, April 16, of pneumonia.

William J. Zinn, Sherman, Ky.; Medical College of Ohio, Cincinnati, 1857; aged 95; died, April 21, of heart disease.

Charles Wesley Bond, Chicago, Rush Medical College, Chicago, 1925; aged 26; died, April 25, of pneumonia.

William D. Valentine, Spokane, Wash.; Physio-Medical Institute, Cincinnati, 1881; aged 74; died, March 20.

Eston B. Stephenson, Charleston, W. Va.; University of Louisville School of Medicine, 1897; died, April 17.

Jasper Franklin Bryant, Louisville, Ky.; Louisville Medical College, 1885; aged 62; died, April 20, of uremia.

James Alvin Minor, San Antonio, Mo.; Ensworth Medical College, 1885; aged 62; died, April 20, of uremia.

Charles Bauer ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1884; aged 83; died, April 23.

Sydney G. White, Warsaw, Ind.; Baltimore Medical College, 1893; aged 61; died, April 10, of nephritis.

Sarah M. Siewers, Massillon, Ohio; Electic Medical Institute, Cincinnati, 1891; aged 71; died, April 22.

Thomas W. Pomroy, New York; Eclectic Medical College of New York, 1889; aged 93; died, April 18.

William Hobdy, Hamilton, Texas; Illinois Medical College, Chicago, 1902; aged 65; died, February 27.

Edward F. Allen, Fayetteville, Ind. (licensed, Indiana, 1897); aged 87; died, April 30, of senility.

J. W. Heskett, Salem, Neb.; Physio-Medical Institute, Cincinnati, 1874; aged 74; died, April 14.

The Propaganda for Reform

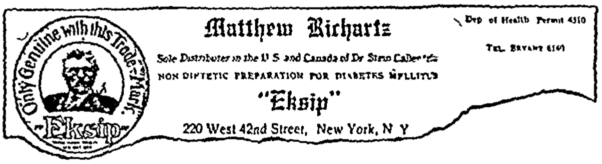
In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

EKSIP FOR DIABETES

A Vicious Piece of Mail-Order Quackery

One Matthew Richartz of New York City is exploiting the sufferer from diabetes in the sale of a nostrum known as "Eksip." Richartz' story is that "the noted Stein-Callenfels, the European specialist," after a life-long study, "amazed other European specialists with his famous discovery," the cure for diabetes known as Eksip. All of which is, of course, sheer buncombe. Richartz says further that his brother was closely connected with this famous individual, and, following Stein-Callenfels' sudden death, the formula of Eksip was turned over to the brother of Matthew Richartz, who has made Matthew the sole proprietor and distributor in America.

The advertising slogan for Eksip is: "No More Dieting! No More Starving! Eat And Get Well!" Richartz gets in touch with his victims, as is usual in mail-order quackery, through the willingness on the part of certain newspapers to share in the profits of quackery. Diabetics are urged to write for a booklet entitled "Eat and Get Well," which Richartz sends to anyone who asks for it. The booklet contains certain banalities, and quotations from standard works are so presented as to lead the reader to surmise that men like Ruhräh, Friedenwald and von Noorden oppose dieting in the treatment of diabetes. The booklet shows further that the only treatment for diabetes that has proved satisfactory is Eksip, and "in connection with the use of this preparation, no system of diet is given." However, the claims in the newspaper advertisements that lead the sufferer to suppose that he can eat what he likes and as much as he likes, if he takes Eksip, are not sustained in the "Eat And Get Well" booklet. There the victim is told that it is to his own interest "to avoid eating things high in percentage of carbohydrates" until after Eksip has cured the diabetes! The letter, however, which goes with the booklet, contains the following paragraph:


Only Genuine with this Trade-Mark
Eksip

Matthew Richartz
Sole Distributer in the U S and Canada of Dr Stein Callen'fels
NON DIETETIC PREPARATION FOR DIABETES MELLITUS
"Eksip"
220 West 42nd Street, New York, N Y

Dep of Health Permit 4510
Tel. Bryant 6161

> "The Eksip treatment has produced almost unbelievable results during the short time it has been used in this country. Nothing ever known to medical science has proved such an astounding success in making diabetics well. All diet list theories have been smashed — knocked to smithereens. *It is now possible, thru the Eksip discovery, for diabetics* to cast aside all restricted diet programs, and starvation absurdities, eat those foods that are necessary for strength and normal functioning of the body, and become free from sugar."

Eksip comes in tablet form—200 to a bottle. One bottle, for which $6 is charged, comprises a "full treatment." With the treatment come directions, and again the diabetic finds that the advertising claim that the diabetic can "cast aside all restricted diet programs," is hedged about with qualifications. In the "Directions" he is warned not to "overload the system with bread, potatoes, and other high carbohydrates," and he is told that the best thing to do is to "leave them alone until your diabetic condition has disappeared." Furthermore, the diabetic is warned, *after* he has purchased the nostrum, that he should not abandon the diet to which he has been used: "The best course to follow is to wait two or three weeks before changing your diet, so as to give the tablets a chance to take effect."

Of course, no information is given regarding the composition of Eksip; the question of composition is lightly dismissed with the general statement that Eksip is a "palatable compound prepared from freshly gathered herbs and plants," and that it is "based on Dr. Stein-Callenfels secret formula." There is the usual farrago of testimonials common to the mail-order quack, purporting to be from patients who are alleged to have been cured. Richartz' booklet contains what purport to be two testimonials of physicians—one from Dr. Edmund Kolb, New York City, and the other credited to Dr. A. Francis Briggs, Long Island City, New York. Dr. Kolb was born in 1855 and died in March, 1925. He was not a member of his local society. Dr. Briggs was licensed in New York in 1907 as a graduate of the Long Island College Hospital for 1904. He is not a member of his local society.

Four years ago the A. M. A. chemical laboratory made a preliminary examination of some specimens that were sent in and claimed to be Eksip. At that time the laboratory reported that the bulk of the tablets consisted of magnesium carbonate and starch, with a small quantity of an unidentified drug. Recently, because of the number of inquiries which The Journal has received relative to this nostrum, it was decided to subject the stuff to a more complete analysis, and an original bottle of "Eksip" was purchased and submitted to the A. M. A. chemical laboratory for examination. The laboratory reported as follows:

LABORATORY REPORT

"One original bottle of Eksip (Matthew Richartz, New York, N. Y.) was submitted to the A. M. A. chemical laboratory for examination. The bottle contained 200 tablets of a gray color, odorless and almost tasteless; the average weight of each tablet was 0.23 Gm. (approximately 3.6 grains). The only clew to composition given in an accompanying pamphlet was: '. . . "Eksip"—(which is a combination of simple and harmless herb and root extracts) . . .' Qualitative tests indicated the presence of magnesium, a trace of calcium, carbonate, extractive material of vegetable origin, and an acid insoluble substance resembling talc. Magnesium was present as the basic carbonate. Under the microscope, the starch grains appeared to be those of Bermuda arrowroot. Alkaloids, heavy metals, organic acids, or emodin bearing drugs were not found.

"Quantitative determinations yielded the following:

"Magnesium carbonate (calculated from magnesium oxide)	84.8 per cent
"Starch	6.9 per cent
"Acid insoluble material	6.2 per cent
"Undetermined (by difference)	2.1 per cent
	"100.0

"From the foregoing it may be concluded that 'Eksip' contains essentially magnesium carbonate and starch."

It is to be hoped that the overworked fraud-order branch of the Post Office department will before long get around to this dangerous piece of quackery.

Correspondence

TETANUS

To the Editor:—In an article in the May issue of the *Archives of Surgery,* I have called attention to the great value of treating tetanus by large doses of serum intravenously. It is recommended that intraspinal injections be given up entirely, as they would seem to increase the mortality rate.

If the tables published mean what they seem to mean, this is a very important matter in the treatment of this disease. It is, however, desirable that a large number of additional statistics should be collected. I would therefore much appreciate it if any physician who employs this method of large doses by vein to the exclusion of spinal treatment would report the facts at once so that another statistical study can be published later.

J. M. Wainwright, M.D.,
912 Clay Avenue, Scranton, Pa.

"CONTROLLING THE ODOR AND TASTE OF ARSPHENAMINE"

To the Editor:—In The Journal, March 20, Stokes called attention to his observation that the disagreeable odor and taste of the arsphenamines, when given intravenously, may be overcome by the use of a wafer containing wintergreen or clove. I imagine that Dr. Stokes' patient used a "life saver" such as are sold at the corner drugstores. This expedient was apparently helpful.

In The Journal, May 1, Broeman calls attention to the fact that good results were obtained by having his patients smell a cotton plug moistened with bay rum. Both of these are inexpensive, easily carried out and apparently effectual.

No doubt there are other methods, the descriptions of which might tax the allotted space in The Journal. Will you please allow me to inform the readers of this column that an efficient and economical way of controlling such disagreeable effects of the arsphenamines is to have the patient hold the nose and breathe through the mouth, from the time immediately preceding the injection until after the injection is finished. With the nostrils closed, air will not play over the nasal mucous membrane and disagreeable effects are avoided. While Dr. Broeman has used his method for ten years, I can say that this method has been useful for similar purposes from time immemorial.

Joseph H. Barach, M.D., Pittsburgh.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

REMOVAL OF MERCUROCHROME STAINS

To the Editor:—Is there any preparation that will remove the stains of merchurochrome-220 soluble from the hands and linen?

W. E. K., M.D., Sunbury, Pa.

Answer.—The full directions for the removal of mercurochrome as well as acriflavine stains was discussed in these columns, Dec. 6, 1924, page 1866. Because of the large number of inquiries received, the directions are again given.

According to New and Nonofficial Remedies, 1924, "the aqueous solution [of mercurochrome] stains the skin red, but the discoloration may be removed by washing in a solution of sodium hypochlorite (solution of chlorinated soda)."

The A. M. A. Chemical Laboratory reports that mercurochrome, acriflavine and other like stains can often be removed according to the following general procedure: The stained cloth is immersed in as small an amount as possible of a solution containing about 1 per cent of hydrochloric acid (1 part of diluted hydrochloric acid U. S. P. and 9 parts of water) and 2 per cent of potassium permanganate. The cloth should remain in this solution not longer than one minute; it is then transferred without rinsing to a solution containing not more than 1 per cent of hydrochloric acid, to which from 5 to 15 per cent (by volume) of solution of hydrogen peroxide, U. S. P., has been added. As soon as the potassium permanganate has been reduced by the hydrogen peroxide, the cloth is *well* rinsed in water. If the stain has not been entirely removed, the procedure is repeated, the cloth being permitted to remain in the acid potassium permanganate solution for a somewhat longer period.

Before trying the method on cloth, however, it is advisable, if possible, to subject a remnant of the unstained material to the same procedure in order to determine (1) whether or not the cloth will withstand the treatment, and (2) in the case of dyed goods, whether or not the original color is removed. In the case of fresh stains of mercurochrome, or acriflavine on dyed cloth, the former, not being fixed, can often be removed without affecting the original color of the cloth.

Stains on the hands can readily be removed by the use of the solutions just described.

PROTECTING THE HANDS AGAINST GASOLINE AND NAPHTHA

To the Editor:—Will you please give me the information concerning the possibility of protecting the hands against gasoline or naphtha gas? Workers in dry cleaning establishments find it necessary to put their hands in gasoline many times during the day, and recently there have come under my observation several cases of dermatitis from the gasoline or cleaning fluid, with secondary infections developing in the skin. Rubber or leather gloves are not practical.

Willard D. White, M.D., Minneapolis.

Answer.—Protection for the hands against the action of naphtha and gasoline is secured with greater difficulty in the dry cleaning industry than in such others as painting. This is due to the fact that it is not practical to use oily applications for the hands, for fear that the garments being cleaned may come in contact with these oily substances.

A prime factor in the production of this dermatitis, and in paving the way for secondary bacterial or fungus infection, is the de-oiling of the skin by the naphtha, gasoline or benzene. On this account the application of some bland oily material, such as hydrous wool fat or oil of theobroma, is called for. Protection for most workers may be brought about by the following steps: thorough cleansing of the hands and arms at the end of the work period with a soap that lathers freely. Immediately afterward the hydrous wool fat or oil of theobroma should be rubbed into the skin of the hands and forearms thoroughly. The application of oily material should be repeated in the morning, and once or twice during the day if the circumstances of work warrant. Some workers become so susceptible as to require a change of occupation. At the first indication of the dermatitis, the worker should be taken away from exposure to the irritants and should be treated with a weak solution of aluminum acetate. If the condition is severe, the use of aluminum acetate for three or four days should be followed with applications of zinc oxid, 10 per cent, in olive oil.

There are also on the market certain proprietary preparations for protecting the hands against gasoline and oil, particularly in garages. These appear to consist of a substance resembling a soap such as is present in chloramine surgical cream or paste. Just how efficient these preparations are in industrial use, we do not know.

GLUCOSE BRAIN BROTH

To the Editor:—Kindly send me the formula for glucose brain broth-Rosenow.

Charles Hewson Canning, M.D., Atlantic City, N. J.

Answer.—The question was referred directly to Dr. Rosenow who replies:

Two mediums, dextrose brain broth and soft dextrose brain agar, have been found especially useful. They are prepared from meat infusion or beef extract in the usual way, and titrated so that the final product is from 0.5 to 0.7 acid to phenolphthalein. In order not to interfere with the growth of sensitive bacteria and yet to indicate their number, the agar medium is made to contain only 0.5 per cent of agar, just sufficient to jell, instead of the usual 1.5 or 2 per cent. Both of these mediums are placed in test tubes so that the column of medium is at least 8 cm. tall. Pieces of fresh brain substance, equivalent to about 1 Gm., are added to the bottom of each tube to make the column approximately 10 cm. tall. The mediums are then sterilized in an autoclave at 15 pounds pressure for fifteen minutes, or in an Arnold sterilizer on three successive days. Dextrose, from a concentrated sterilized solution, is added to both mediums after sterilization to make them 0.2 per cent dextrose; also decolorized acid fuchsin. The addition of ascites fluid, blood or serum, just before use, while advantageous in special instances, is found unnecessary for routine work. The brain substance renders the bottom of the tube anaerobic; the top necessarily is aerobic, and it follows that every gradation of oxygen pressure occurs between these two points.

NARCOTIC TAX STAMP MUST BE POSTED

To the Editor:—Is it necessary that a physician post in a conspicuous place in his office the special tax stamp issued him by the Collector of Internal Revenue as evidence of his registration under the Harrison Narcotic Act? ————, M.D.

Answer.—The conspicuous posting of such stamps is required by section 3239 of the Revised Statutes which section is made applicable to the Harrison Narcotic Act by section 7 of that act.

PLUS FOUR DIACETIC ACID

To the Editor:—In The Journal, January 9, page 104, Bowcock and Wood refer to "a plus four reaction for diacetic acid." I would greatly appreciate it if you could kindly inform me how the diacetic acid test is graduated, as we would much like to introduce it into this college.

A. Stott, King George's Medical College, Lucknow, India.
Major, I. M. S.

Answer.—The inquiry was referred to Dr. H. M. Bowcock, who replied: "I would state that the method which I use in testing the urine for diacetic acid is the usual qualitative test. I use a 10 per cent water solution of ferric chloride and perform the Gerhardt test as described in the Treatment of Diabetes Mellitus, by Joslin, third edition, page 359. The reading of the test is influenced by the personal equation. I usually consider a test as four plus when the color is so deep that it will not transmit light."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.

American Board of Otolaryngology, Canada: Montreal, June 1. Sec., Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.

Arizona: Phoenix, July 6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

California: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, Regular Board and Homeo. Board, June 15-17. Pres., Dr. H. W. Briggs, Wilmington.

Florida: St. Petersburg, June 14-15. Sec., Dr. H. M. Rowlett, Box 603, Tampa.

Georgia: Atlanta, June 9-11; Augusta, June 1-3. Sec., Dr. C. T. Nolan, Marietta, Ga.

Indiana: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.

Iowa: Iowa City, June 8-10. Commissioner of Health, Dr. Don M. Griswold, State Capitol, Des Moines.

Kansas: Kansas City, June 15. Sec., Dr. Albert S. Ross, Sabetha.

Kentucky: Louisville, June 24-26. Sec., Dr. A. T. McCormack, 532 West Main Street, Louisville.

Maine: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: Baltimore, Reg. Bd., June 15-18. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 15-16. Sec., Dr. Joseph S. Garrison, Old Orchard Rd., Ten Hills, Baltimore.

Massachusetts: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

Michigan: Ann Arbor, June 8-10. Detroit, June 14-16. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

Minnesota: Minneapolis, June 15. Sec., Dr. A. E. Comstock, 734 Lowry Bldg., St. Paul.

Missouri: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.

National Board of Medical Examiners: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.

Nebraska: Omaha, June 8-10. Director, Bur. of Exam. Bds., Mrs. Clark Perkins, Lincoln.

New Jersey: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, Room 1101, Trenton Trust Bldg., Trenton.

New York: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, Education Bldg., Albany.

North Carolina: Raleigh, June 21-25. Sec., Dr. K. P. B. Bonner, Morehead City.

North Dakota: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.

Ohio: Columbus, June 8-11. Sec., Dr. H. M. Platter, Columbus.

Oklahoma: Oklahoma City, June 15-16. Sec., Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.

Rhode Island: Providence, July 1-2. Sec., Dr. B. U. Richards, 315 State House, Providence.

South Carolina: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

Texas: Austin, June 15-17. Sec., Dr. T. J. Crowe, 918 Mercantile Bank Bldg., Dallas.

Utah: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

Vermont: Burlington, June 23. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 16-19. Sec., Dr. J. M. Preston, 720 Shenandoah Life Bldg., Roanoke.

West Virginia: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, Basic Science Board, June 12-13. Sec., Dr. M. F. Guyer, Madison. Regular Board, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

Medical Economics and Miscellany

IS UNIVERSAL LIFE INSURANCE COMING?

WILLIAM EVERETT MUSGRAVE, M.D.
San Francisco

Some 55 million individuals, or approximately one-half the people of the United States, are protected by life insurance recorded in 100 million policies of an average value of $1,333, carried (90 per cent +) by about 170 companies: there are more than three times as many insurance policies in force as there are automobiles in use. Approximately 75 billion dollars of life insurance is in force, and it is being increased at the rate of some 15 billion dollars a year. The annual income of this incomprehensible business closely approximates that of the national government, being 3 billion and some odd million dollars for each. However, in disbursements, the government wins by spending more than 3 billion, or nearly all its income, while the life insurance companies expended last year (to policyholders) about half their income.

Not only is this healthy giant of life insurance growing like the proverbial beanstalk, but it is spreading its branches like the green bay tree. It is becoming what the name life and health insurance implies, and less the death insurance of earlier days. It is branching out into the field of health and medical service to such an extent that if it is wisely guided it is likely, at no far distant date, to do medically for our citizens, by private and mutually beneficial enterprise—and do well—what Germany, England and certain other countries are unsuccessfully trying to do by government in monopolizing and socializing the practice of medicine. Our government has largely undertaken similar control of education, but so far has only fastened its tentacles into certain phases of health.

There is one phase of the commendable growth of life and health insurance, as private business, that concerns all people and ought to be better understood than it is. It consists essentially in a weakening of the health requirements for policy purchasers and extension of the medical care of policyholders, apparently under the philosophy that the lowered health standards for purchasers will materially increase the *volume of business,* and that this, together with more extensive medical supervision of defective policyholders' health, will take care of the extra hazards inherent in this new development of business. It may be that this is a fact. In any event, we may rest assured that the financiers who determine the policies of insurance carriers are not wholly altruistic in their actions and that they are doing as little guessing as possible in taking this definite step. To be sure, not all companies admit that the doing away with medical examinations of applicants for insurance will result in increasing life hazards among their assured, and none of them call particular attention to it as a probability.

One speaker at the annual meeting of the Association of Life Insurance Presidents (Dec. 3, 1925) made the argument and quoted statistics which he interpreted to show that losses are greater among risks based on medical examination than among those selected without such examination. Other speakers at this conference considered that the probable increased losses among nonmedically examined risks would be more than offset by the saving of the $15,000,000 paid to physicians annually. Only one or two of the speakers at this great association of insurance policy makers called particular attention to the savings, as well as the increased benefits to policyholders, clearly indicated by their extending health supervision and the practice of medicine among their assured, now gaining such headway among the companies.

The selling of insurance without medical selection of risks and without health supervision of the insured is as old as life and health insurance. The business started that way in England some 200 odd years ago. Later, medical examination of risks was made a requisite for policy purchasers, and for many years was almost universally followed. There a certain amount of medical supervision of the insured was introduced, at first frankly as a protection to the financial investment: about as altruistic as the old encouragement of prolific human breeding because profligate rulers needed more "war fodder." With the expansion of medical care, and consequent *prolonging of the lives of policyholders,* some companies began to lower their standards of medical scrutiny of insurance purchasers. The last few years has seen such an astonishing decrease in the medical requirements for applicants for insurance and such a tremendous increase in the volume and variety of medical care supplied to those insured that, in effect, it makes of life insurance a new type of business with vast potentialities for good and evil.

If vital and actuarial statistics that have been accumulating over the years are even approximately correct, there ought to be available sufficient data about all life hazards on which to base a safe premium rate for the insurance of persons of all ages and most conditions of health; this assuming, of course, adequate volume of business and sufficient fluid reserves to meet possible extraordinary situations produced by epidemics and catastrophes. Obviously, the premiums on policies covering miscellaneous risks must be higher than is necessary for risks selected by thorough medical examination, and carriers dealing in the more hazardous form of business would call for scrupulous financial safeguards.

That some leaders in the insurance field recognize and appreciate the vast difference between life and health risks selected in a distant central office, from medical data secured by nonmedical people, plus the examination of a specimen of urine, also sent by mail, and risks that are based on the additional findings of a competent physician, is apparent in their public statements. The arguments and "not conclusive" statistics quoted by some insurance authorities to support their conclusions, that medical examinations have little or no value in the selection of risks, loses weight by the fact that they, as well as other companies, strengthen and enlarge their medical service to their assured as they lower their standards of acceptance. Medical service is, of course, precisely as valuable, or valueless, in the one instance as in the other.

However, that more and more of the reliable insurance companies are rapidly expanding and promoting insurance, without the customary careful selection of risks based on medical examination, indicates that they have sufficient facts to warrant promotion and extension of a practice headed toward universal or unrestricted life insurance. Considered solely in the interests of public health and welfare—which is the only way physicians or any one else should consider it—there is much to commend this venture. It is a logical and important step toward that even more desirable goal when accident and health insurance carriers will also liberalize their policies until they too will write policies with so few limitations, exemptions and restrictions that most people can secure—voluntarily—coverage that ameliorates the dangerous and worrisome hazards of health and distributes the costs and *personal losses incident to accidents and infirmities.* In the meantime it is to be hoped that leaders in the gigantic business of life insurance will so develop their plans that more and more citizens may purchase, at costs as reasonable as consistent with the hazards of the business, that comfort which all people have come to recognize as a normal blessing of life insurance.

HEALTH SERVICE FOR POLICYHOLDERS

Supervision of the health of policyholders, which is being expanded to offset the increased hazards inherent in lowering the standards for acceptable risks, is a movement of transcendent importance to all people and particularly to physicians and other health-conserving agencies. Several life insurance companies and many accident and health insurers have been feeling their way for a long time toward the goal at which their financial interests would be better protected, the comfort and lives of their insured extended, and society served by the development of their own medical departments to serve the health of their policyholders. President Haley Fiske of the Metropolitan asked the Association of Life Insurance Presidents recently, "Is there any ill or contingency in life our business will not cover?" In answering the question, he said, "The specters before wage and salaried men and women are death, sickness and accident, unemployment and dependent old age. It is the true function of life insurance to banish these specters." The Metropolitan's plans for banishing these specters is summed up in this quotation from his address:

> "The extraordinary number of policyholders, probably not far from half the population, and in Eastern cities a much larger proportion, put upon the company and its officers a responsibility as to public health and welfare. We see the companies attacking disease, offering diagnosis and advice to individuals, supplying them with health literature, cooperating with government and health and school officials, reaching out to give education to the people and even to the children, in preventive medicine. The companies' official staff must now comprise not only insurance men but financial experts, social students, physicians, specialists in health, in welfare, in education, in publicity. It is not for advertising that one company nurses free of change its sick poor by two and a half million yearly visits, distributes literature on prevention and cure of sickness from practically every known disease to the extent of forty millions of pamphlets a year, broadcasts health talks, teaches physical culture by radio; publishes, in seventeen millions of copies of periodicals, its monthly talks on health, with no reference to insurance. It is the fulfilment of responsibility to one sixth of the population covered by its policies. It is concern for public health."

As yet there is no uniformity in the quality, quantity and character of the services supplied by the various companies "free" to the assured but, of course, paid for in premiums. While some carriers are rendering this service themselves, more of them are "farming" it out and presumably thereby not only covering the ostrich's head but making the bird entirely invisible; and some have not yet undertaken this form of medical practice. There are appealing talking points in favor of these great corporations' adding the practice of medicine—usually disguised in name at least—to their other business ventures; but it remains to be demonstrated that they realize the intelligence or the size of the bear whose tail they are grasping. However, it is easier to respect the company that tackles its own bear than it is those who exercise the caution of employing self-styled middlemen to handle their hot chestnuts.

Any practical movement that will insure better health by improved medical care and thus prolong life and promote happiness, regardless of its possible effects on physicians and other existing health agencies, ought to be encouraged. But before steps are taken calculated to change radically the ages-old custom which recognizes health as a personal matter, served by personally selected advisers, to a more public matter to be attended to by the agents of some corporation, all the logical consequences ought to be reviewed.

STATE MEDICINE MOVEMENTS

The road of social progress is strewn with the wrecks of schemes having for their ostensible purpose the commendable one of promoting health and longevity by the introduction of some wholesale organized system of medical care. One of the largest and oldest of these movements has for its purpose the control of health by the state, to be supported by taxes and served by government employees "free" alike to all citizens. In several countries this scheme has developed into a government monopoly, compulsory for the majority of the citizens. These "compulsory health insurance" or "state medicine" movements, as they are called, vary considerably in methods, but in all the objective is the laudable one of promoting health, treating the sick and prolonging life. They all propose to do this by substituting, for the traditional personal health care by health advisers selected by the patient, wholesale practice carried on by government departments.

Throughout the fifty or more years these experts have been active, they have been under such constant attack by the sick as well as those who serve the sick that, even with all the power of the government, vast numbers of people have continued to appeal to private health agencies for personal service, leaving to the government largely only clients who for one reason or another could not help themselves, and leaving for the government service largely such physicians and other health agencies as prefer a poorly paid government job to the uncertainties of personal practice.

Direct and open efforts to governmentalize health and medical service have always been defeated in the United States, but the leaders of this brand of socialism and commercialism have succeeded in projecting their tentacles far into the social structure in a score or more directions by governmentalizing health service for this and that group of citizens. The most promising antidote in sight to the progressing movement calculated to governmentalize, socialize, sovietize health is the rising tide of associations, societies, groups and corporations that propose to distribute the costs and character of health service on some basis of voluntary agreement between the beneficiary, the health-serving agency and the responsible organization. There are history-making possibilities inherent in this situation, but that they are being intelligently grasped remains to be seen. The idea needs leadership of a kind that will protect the interests of the beneficiary, the health agencies who serve and the investors, and which will do these things in a manner calculated to create and sustain public approval. The great insurance companies are in a position to do this more than ever now that the life companies are enlarging their field to include much of what was formerly considered to be health and accident insurance and personal health service by personally selected physicians. It is quite true that the life companies do not emphasize the fact that they are also health insurers; but when they lower their standards of admission and plan to take care of the consequently increased hazards by an extended and improved medical service to their policyholders, they thereby enter the broader and, to society, the far more useful service of health insurance. Although insurance companies could be charged with conducting this improved medical service for the purpose of prolonging the date when death payments may be due, nevertheless, theoretically at least, it pays the policyholder dividends in better health and longevity, more comforting to him and society than are death benefits.

The future consequences of this expanded and expanding type of life, health and accident insurance on existing agencies of health is problematic; but if the future practice of medicine and health service is to be by employees of insurance corporations, as the only alternative to bureaucratic government service, the interests of society, as well as those who serve, lies with private business. If, as claimed by its leaders, a "true function of life insurance is to banish the specters of sickness and accident," we are destined to see a battle royal between government, managed by politics, and the largest of all private businesses, managed by wealth, over the most precious of human assets. In the meantime, those who serve and those served may only look on, and some of them—pray.

805 Balboa Building.

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As yet there is no uniformity in the quality, quantity and character of the services supplied by the various companies "free" to the assured but, of course, paid for in premiums. While some carriers are rendering this service themselves, more of them are "farming" it out and presumably thereby not only covering the ostrich's head but making the bird entirely invisible; and some have not yet undertaken this form of medical practice. There are appealing talking points in favor of these great corporations' adding the practice of medicine—usually disguised in name at least—to their other business ventures; but it remains to be demonstrated that they realize the intelligence or the size of the bear whose tail they are grasping. However, it is easier to respect the company that tackles its own bear than it is those who exercise the caution of employing self-styled middlemen to handle their hot chestnuts.

Any practical movement that will insure better health by improved medical care and thus prolong life and promote happiness, regardless of its possible effects on physicians and other existing health agencies, ought to be encouraged. But before steps are taken calculated to change radically the ages-old custom which recognizes health as a personal matter, served by personally selected advisers, to a more public matter to be attended to by the agents of some corporation, all the logical consequences ought to be reviewed.

STATE MEDICINE MOVEMENTS

The road of social progress is strewn with the wrecks of schemes having for their ostensible purpose the commendable one of promoting health and longevity by the introduction of some wholesale organized system of medical care. One of the largest and oldest of these movements has for its purpose the control of health by the state, to be supported by taxes and served by government employees "free" alike to all citizens. In several countries this scheme has developed into a government monopoly, compulsory for the majority of the citizens. These "compulsory health insurance" or "state medicine" movements, as they are called, vary considerably in methods, but in all the objective is the laudable one of promoting health, treating the sick and prolonging life. They all propose to do this by substituting, for the traditional personal health care by health advisers selected by the patient, wholesale practice carried on by government departments.

Throughout the fifty or more years these experts have been active, they have been under such constant attack by the sick as well as those who serve the sick that, even with all the power of the government, vast numbers of people have continued to appeal to private health agencies for personal service, leaving to the government largely only clients who for one reason or another could not help themselves, and leaving for the government service largely such physicians and other health agencies as prefer a poorly paid government job to the uncertainties of personal practice.

Direct and open efforts to governmentalize health and medical service have always been defeated in the United States, but the leaders of this brand of socialism and commercialism have succeeded in projecting their tentacles far into the social structure in a score or more directions by governmentalizing health service for this and that group of citizens. The most promising antidote in sight to the progressing movement calculated to governmentalize, socialize, sovietize health is the rising tide of associations, societies, groups and corporations that propose to distribute the costs and character of health service on some basis of voluntary agreement between the beneficiary, the health-serving agency and the responsible organization. There are history-making possibilities inherent in this situation, but that they are being intelligently grasped remains to be seen. The idea needs leadership of a kind that will protect the interests of the beneficiary, the health agencies who serve and the investors, and which will do these things in a manner calculated to create and sustain public approval. The great insurance companies are in a position to do this more than ever now that the life companies are enlarging their field to include much of what was formerly considered to be health and accident insurance and personal health service by personally selected physicians. It is quite true that the life companies do not emphasize the fact that they are also health insurers; but when they lower their standards of admission and plan to take care of the consequently increased hazards by an extended and improved medical service to their policyholders, they thereby enter the broader and, to society, the far more useful service of health insurance. Although insurance companies could be charged with conducting this improved medical service for the purpose of prolonging the date when death payments may be due, nevertheless, theoretically at least, it pays the policyholder dividends in better health and longevity, more comforting to him and society than are death benefits.

The future consequences of this expanded and expanding type of life, health and accident insurance on existing agencies of health is problematic; but if the future practice of medicine and health service is to be by employees of insurance corporations, as the only alternative to bureaucratic government service, the interests of society, as well as those who serve, lies with private business. If, as claimed by its leaders, a "true function of life insurance is to banish the specters of sickness and accident," we are destined to see a battle royal between government, managed by politics, and the largest of all private businesses, managed by wealth, over the most precious of human assets. In the meantime, those who serve and those served may only look on, and some of them—pray.

805 Balboa Building.

REPORT ON NATIONAL HEALTH INSURANCE

Important recommendations involving substantial changes in scope and administration are contained in the report of a royal commission appointed in England in 1924 to inquire into the scheme of national health insurance established by the acts of 1911-1912, and to report what, if any, alterations, extensions or developments should be made in regard to the scope of that scheme and the administrative, financial and medical arrangements set up under it. The scheme came into operation in July, 1912, and a series of amending acts followed, from 1913 to the consolidating act of 1924. The original act had a complexity which in practice yielded no adequate compensating advantage, and this led to amendments aiming at simplification and modification of administration. A second main cause leading to amendment was the war and its economic consequences, but it is a striking tribute to the lines on which the original act was constructed that its administration was able to bear the strain imposed by war conditions so early in its history. The present inquiry is the first general and comprehensive investigation of a scheme under which more than 15,000,000 persons are insured. The commission received little evidence directed against the scheme as a whole, although public invitation was given to any bodies or persons who desired to make representations. There does not now appear to be any considerable body of opinion adverse to the principle of national health insurance. Indeed, a large volume of evidence in its favor was received from many different quarters, testifying to the advantages in health and social security derived under it. The report presents no fewer than 122 recommendations. The first states that national health insurance has established itself as a permanent feature of the social system in this country, and should be continued on its present compulsory and contributory basis, subject to the changes proposed in the report. It is suggested that to the persons at present required to be insured as employed contributors there should be added "persons engaged in employment under a contract for the performance of manual labor for the purpose of any trade or business except so far as such employment may be excluded by a special order." It is also suggested that the revenue of the scheme should continue to be derived from insured persons, employers, with a payment from the national exchequer of a proportionate part of the cost of the benefits and of their administration; and that the cost of the central administration of the scheme should continue to be a charge on the exchequer.

MEDICAL BENEFIT

Medical benefit is declared to have been a valued and successful element in the scheme. Heretofore medical benefit was confined to a general practitioner service; but this limitation detracted from the value of the benefit, and its removal is declared to be urgently desirable. In view of the financial burden of the various social services at present, it is proposed that no extensions of benefit involving substantial additional expenditure should be contemplated now or in the immediate future, but that any immediate changes in the scheme should be limited to those possible within its present financial resources. An analysis of the expenditure of approved societies on sickness and disablement benefits reveals the need for more effective supervision of claims for those benefits.

PROPOSED BENEFIT EXTENSIONS

The extensions of benefits to be made are placed in the following order of priority: (*a*) extension of the scope of medical benefit; (*b*) the provision of allowances in respect of dependents of insured persons in receipt of sickness or disablement benefit; (*c*) improved provision at the time of pregnancy and childbirth for insured women and the wives of insured men; (*d*) provision of dental treatment. The extension of the scope of medical benefit should take the form of the provision of: (*a*) expert medical advice and treatment for persons who can travel to meet the specialist; (*b*) expert advice for persons who are unable to travel; (*c*) laboratory services. Inpatient treatment in hospitals, major operations in the home, maternity services and dental service should not be included at present.

SPECIALIST TREATMENT

The extended service should be provided, not by way of development of the outpatient work of the hospitals, but through an independent scheme organized, under the general direction of the ministry, throughout the whole country by the insurance committees. Provision should be made for the closest cooperation between the general practitioners and the specialists. Any practitioner possessing the requisite qualifications should be entitled to take part in the work, and the decision as to whether particular practitioners possess these qualifications should lie in the hands of a mixed lay and medical committee for each area. In the initial stages of the scheme, arrangements might be made for patients who are able to travel to attend at the specialist's office, at the outpatient departments of hospitals, or at clinics established by the local administrative authority, as may be found most convenient.

SOME OBJECTIONS

Two of the members of the commission, while concurring in the terms of the majority report, consider that there are two further matters which ought not to be ignored, particularly if due weight is to be given to the reactions of our social legislation on the trade and industry of the country. They postulate, as an elementary principle, that in promoting schemes of social legislation the state should avoid incurring any expenditure not essential to the end in view, and that the funds required should be so collected as to involve a minimum disturbance to industrial enterprise. The lack of coordination in our social services is the first point to which they draw attention, and they point out the inconvenience and, by implication, the waste which it occasions. While they do not dissent from the present arrangements, under which the employer's contribution is on a flat rate proportioned to the number of employees, they doubt whether the reactions of the cost of health insurance on the trade and industry of the country are fully appreciated. At present the contribution made by employers to the health insurance fund is roughly proportioned to the wages bill, but the wages bill has no necessary relation to the profits of a firm. In consequence, a firm employing a large staff will contribute largely to the health insurance fund, even though it be in a depressed trade and may not at the time be covering even overhead expenses; on the other hand, provided it employs few men, a prosperous firm will contribute but little. It follows that the ultimate incidence of the tax and its reaction on trade may vary greatly from one industry to another. In certain cases it may doubtless be possible in large measure to pass the burden on to the consumer; elsewhere this may be wholly impossible. The burden imposed by social insurance on industry is in certain cases very real, and, unfortunately, it is at present most onerous where there is least capacity to bear it, in those industries, as it happens, which are most essential to the country's prosperity. In the case of the "sheltered occupations" (those which are not exposed to competition) little inconvenience may arise; the burden may be borne or passed on. But in the case of the unsheltered industries, in which the full rigor of foreign competition has already produced a position of grave embarrassment reflected in the unemployment returns, it is not permissible to regard the burden of social insurance as negligible and free from possible detrimental reactions on the prosperity of the country and, indeed, on the employment of the worker.

Book Notices

Comparative Physiology. By Lancelot T. Hogben, M.A., D.Sc., Assistant Professor in Zoology, McGill University. Cloth. Price, $3. Pp. 219, with 44 illustrations. New York: The Macmillan Company, 1926.

This is a well written, critical and interesting volume on comparative physiology, with chapters on muscular contraction, ciliary activity, secretion, respiration, nutrition, circulation, endocrine coordination, nervous coordination, animal behavior, fertilization, inheritance and development, particularly as illustrated in the lower animals. The book is addressed to two classes of students—advanced students of zoology who need information and orientation on the functional side of biology, and advanced medical students who may be or should be interested in the general manifestations of life and disease as it appears in the entire animal kingdom. The author notes, quite correctly, that there exists today no up-to-date book on comparative physiology in the English language. The present volume aims to supply this need. The modesty of the claims of the author for erudition and judgment in the presentation is as noteworthy as is the excellence of the book. The volume can be recommended for interesting study and information to any physician who still retains or who may long to reestablish his contact and information in general animal life. Even recent graduates in medicine can read the volume with profit, because even in the best medical schools most of the data in general physiology are left out of the courses in physiology because of lack of time.

Die Geschlechtskrankheiten. Leitfaden für Studierende und Aerzte. Von H. Löhe, A. o. Prof. A.D. Univ. Berlin. Paper. Price, 8.40 marks. Pp. 213, with 75 illustrations. Berlin: S. Karger, 1926.

This is a collection of the postgraduate lectures that the author used to give at the Berlin dermatologic clinic. They cover the clinical pathology, diagnosis and treatment of gonorrhea and syphilis. While written along the customary lines, they excel in precise and clear presentation and in the inductive method applied to the discussion of the therapeutic measures. The illustrations are instructive. A special chapter is devoted to venereal prophylaxis. There is a tabulation of prescriptions that should prove useful.

Statistical Analysis. By Edmund E. Day, Professor of Economics, School of Business Administration, University of Michigan. Cloth. Price, $4. Pp. 459, with illustrations. New York: The Macmillan Company, 1925.

This is primarily designed as a general introduction to statistical methods. It is clearly written and well provided with illustrations. The examples and illustrations are based chiefly on economic data, so that the book is not especially adapted for physicians or other students of vital statistics. The author's handling is conservative and never extreme. He sees clearly that the statistical method can never take the place of experiment where experiment is possible. Applied to data such as are found in many biologic problems where many separate and distinct factors are concerned and where experiment is not feasible, the statistical method may be valuable. The temper of the discussion may be gathered from the following statement, which might profitably be kept in mind by all who attempt to use the statistical method of analysis: "Statistical results may create presumptions in favor of certain conclusions. They rarely dispose of matters completely."

Respiratory Function in Disease. By Jonathan C. Meakins, M.D., C.M., F.R.C.P., Professor of Medicine, McGill University, and H. Whitridge Davies, M.B., B.S., Lecturer in Methods of Clinical Investigation in the Department of Therapeutics, University of Edinburgh. Cloth. Price, 28 shillings net. Pp. 478, with 63 illustrations. London: Oliver and Boyd, 1925.

This book, intended mainly for those engaged in the practice and teaching of medicine, presents the subject of disturbed respiratory function from the standpoint of clinical medicine. In it are collected the results of important investigative work scattered throughout the enormous literature that has appeared on this subject during the last few years. The authors attempt to give to physicians a working knowledge of the chemical and physiologic facts concerning respiration. Part I is concerned with normal respiratory function. The theories and known facts of hemorespiratory exchange are considered. Part II deals with respiratory function under abnormal conditions. Chapters are devoted to vital capacity and lung volume; respiratory exchange and the basal metabolic rate; therapeutics of respiratory disturbances; and methods of investigation. An extensive bibliography is appended. The work serves its purpose in presenting in simple terms the fundamental facts of a technical subject.

A Text-Book of Psychology for Nurses. By Maude B. Muse, R.N., A.M., Instructor of Nursing Education at Teachers College, Columbia University. Cloth. Price, $2.50 net. Pp. 351, with illustrations. Philadelphia: W. B. Saunders Company, 1925.

The need of some knowledge of the patient as a human being instead of as a mere collection of organs each of which is subject to disease is steadily becoming recognized as essential for all who would undertake the care and treatment of the sick. To no group is this of greater importance than to the nurse, not only as regards the care of her patients but also in relation to her own satisfactory adjustment to her work. In this volume is presented an outline of the modern conception of human behavior expressly designed by a nurse for the use of nurses. With this in view, the various topics are throughout illustrated by situations taken from the hospital and training school. It is written in simple language and is probably as brief as is consistent with a practical working knowledge. It can be safely recommended for use in training schools for nurses.

Visual Field Studies. By Ralph I. Lloyd, M.D., F.A.C.S., Surgeon, N. Y. Ophthalmic Hospital. Cloth. Price, $6 net. Pp. 216, with 124 illustrations. New York: Technical Press, 1926.

This is the outgrowth of a series of postgraduate lectures, elaborated into a permanent form. It starts with a brief, but interesting history of perimetry as developed during the latter half of the last century, and progresses into the modern concepts of both central and peripheral perimetry. The chapter devoted to retinal physiology is written in a refreshing manner in that the practical application of the dry-as-dust laws is stressed. It may be remembered that the author developed the present day stereocampimeter and consequently is a red-hot enthusiast for binocular fixation in perimetry as well as an ardent devotee of tangential perimetry. According to the trend of modern thought, he seems to be justified. The method of taking visual fields, central and peripheral, arciform and tangential, is given at length, and the ensuing results are analyzed clearly and forcefully. Fully fifty pages are devoted to the visual fields in retrobulbar disease, and the differences due to varied etiologic factors elaborated on. Extensive studies of the so-called amblyopia ex anopsia are included, and the author inclines toward the opinion that this condition results from retinal birth hemorrhages. The book is well worth while, not for students, but for ophthalmologists, beginners as well as others. A rather unique feature is a diagram on the front cover representing an early perimetric experimental apparatus used by Aubert and Foster in 1857.

Methodik der Untersuchungen von Nervenelementen des makro- und makro-mikroskopischen Gebietes. Teil I. Von Prof. Dr. W. Worobiew. Paper. Pp. 130, with 39 illustrations. Berlin: Oscar Rothacker.

Gross anatomic research as ordinarily carried out through dissection with the naked eye and natural light, has certain limitations. For instance, it is not possible, under such conditions, to follow up the course of afferent nerves in the heart muscles, the walls of the stomach, or the bladder. The study of finer ramifications of the nerve fibers, their connections with the ganglion cells and other structures is left to the histologist. The latter, however, is able to study only small areas and has to resort to reconstruction methods in order to bring out the topography of the finer nerve structures. Areas that are inaccessible to the gross anatomist and do not actually belong to the domain of the histologist are named by Worobiew macro-microscopic. In this book, which is merely an introduction, he describes the methods used in "macromicroscopic" studies by himself and his pupils secting is done with very fine instruments, under a binocular dissecting microscope, the parts being placed in suitable clearing mediums and stained in toto; that is, the entire object (uterus, heart, stomach) is stained and dissected. A number of beautiful photographs show the remarkable results obtained by the macromicroscopic methods described. They clearly show, for instance, the ganglionic plexuses in the walls of the heart and the bladder, the nerves of the tendons, and the ganglion cells in the stomach walls. In short, the topography of final nerve ramifications and their relationship to the ganglionic system is brought out with remarkable clearness. It is unquestionably a highly scientific and useful book, well written and excellently edited.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Chemistry in Agriculture: A Cooperative Work Intended to Give Examples of the Contribution Made to Agriculture by Chemistry. Edited by Joseph S. Chamberlain, Professor of Agricultural and Organic Chemistry, Massachusetts Agricultural College. Advisory Editor, C. A. Browne, Chief, Bureau of Chemistry, United States Department of Agriculture. Cloth. Price, $1. Pp. 384, with illustrations. New York: The Chemical Foundation, Inc., 1926.

Glorification of modern chemical advance by experts in various fields.

Puerperal Septicæmia: Its Causation, Symptoms, Prevention and Treatment. Being the Substance of a Thesis Submitted to the Royal Society of Medicine in June, 1924, and Awarded the Nicholls Prize. By George Geddes, M.D., C.M. Cloth. Price, $4. Pp. 200, with illustrations. New York: William Wood & Co., 1925.

Prize thesis reaching conclusion that only delivery by trained midwife in hospitals under medical supervision will lower still further deaths from puerperal sepsis.

Stauungstypen bei Kreislaufstörungen. Mit besonderer Berücksichtigung der exsudativen Perikarditis. Eine anatomische, experimentelle und klinische Untersuchung. Von Herbert Elias, Assistent an der I. med. Klinik, und Adolf Feller, Assistent am path.-anat. Institute. Paper. Price, 24 marks. Pp. 232, with 93 illustrations. Berlin: Julius Springer, 1926.

Research on exudative pericarditis and heart disease in general.

Nervous and Mental Disorders from Birth Through Adolescence. By B. Sachs, M.D., Consulting Neurologist to the Mount Sinai and Montefiore Hospitals, and Louis Hausman, M.D., Instructor in Neuro-Anatomy, Cornell University Medical College. Cloth. Price, $10 net. Pp. 861, with 110 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Consideration from neurologic point of view of nerve disturbances with highly conservative discussion of psychologic and psychiatric problems.

The Diagnosis, Treatment and End Results of Tuberculous Disease of the Hip Joint. By George Perkins, M.Ch., F.R.C.S., Assistant Surgeon to the Royal National Orthopædic Hospital. Cloth. Price, $1.75. Pp. 118, with 32 illustrations. New York: Oxford University Press, 1926.

Monographic essay, emphasizing recumbency, traction and fixation, combined with open air, hygiene and heliotherapy for treatment.

Advising the Tuberculous About Employment. By W. I. Hamilton, Personnel Director, Boomer-Dupont Properties Corporation, New York, and T. B. Kidner, Institutional Consultant, Technical Adviser, Central New England Sanatorium Association Industrial Settlement. Cloth. Price, $2. Pp. 171. Baltimore: Williams & Wilkins Company, 1926.

Suggestions on the adjustment of the handicapped to their occupational environment.

The Private Practitioner as Pioneer in Preventive Medicine: Being the annual oration of the Hunterian Society, 1926. By Sir George Newman, K.C.B., M.D., D.C.L. Paper. Price, 30 cents. Pp. 47, with 1 illustration. New York: Oxford University Press, 1926.

Emphasizing life of John Hunter and showing how general practitioner has helped to build our knowledge of preventive medicine.

The Bacteriophage and Its Behavior. By F. D'Herelle, M.D., Director of Laboratories at Alexandria, Egypt. Translated by George H. Smith, Ph.D., Associate Professor of Bacteriology and Immunology, School of Medicine, Yale University. Cloth. Price, $5. Pp. 629, with illustrations. Baltimore: Williams & Wilkins Company, 1926.

The last word, concluding with a chapter on phagotherapy for dysentery and staphylococcus infections in which the author deprecates premature commercial exploitation.

Young's Practice of Urology. Based on a Study of 12,500 Cases. By Hugh H. Young and David M. Davis. With the Collaboration of Franklin P. Johnson. Volumes I and II. Cloth. Price, per set, $25 net. Pp. 1484, with 1003 illustrations. Philadelphia: W. B. Saunders Company, 1926.

A monumental text based on vast personal experience and research, beautifully illustrated.

An Introduction to the Study of X-Rays and Radium. By Hector A. Colwell, M.B., D.P.H., Director of the Radiological Department, King's College Hospital, and Cecil P. G. Wakeley, F.R.C.S., F.R.S., Assistant Surgeon, King's College Hospital. Cloth. Price, $3.35. Pp 203, with 37 illustrations. New York: Oxford University Press, 1926.

Handbook of elementary instruction on nature and application of radioactive substances.

The Endocrine Organs: An Introduction to the Study of Internal Secretion. Part II. The Pituitary; The Pineal; The Alimentary Canal; The Pancreas, and the Sex Glands. By Sir E. Sharpey Schafer, LL.D., D.Sc., M.D. Second edition. Cloth. Price, $7. Pp. 177-418, with 117 illustrations. New York: Longmans, Green & Co., 1926.

Important contribution summarizing latest investigations, with critical comment.

Fibrilación y Flutter Auricular. Por el Dr. Manuel Vela González. Discurso de Recepción en la real Academia de Medicina de Sevilla. Discurso de Contestación del Dr. Vicente Hernández Irib, Académico Numerario. Paper. Pp 65, with 33 illustrations. Sevilla, 1926.

Thesis on auricular fibrillation.

Neuritis and Neuralgia. By Wilfred Harris, M.D., F.R.C.P., Senior Physician to St. Mary's Hospital, and to the Hospital for Epilepsy and Paralysis, Maida Vale. Cloth. Price, $4. Pp 418, with 45 illustrations. New York: Oxford University Press, 1926.

Practical consideration of common complaints, with useful suggestions on treatment.

Cesarean Section. With a Table of 120 Cases. By Herbert R. Spencer, M.D., B.S., F.R.C.P., Consulting Obstetric Physician to University College Hospital. Cloth. Price, $2.75. Pp. 71, with 5 illustrations. New York: William Wood & Co., 1925.

Consideration of 120 cases, with an excellent historical introduction.

Medical Uses of Radium: Summary of Reports from Research Centres for 1924. Medical Research Council, Special Report Series No. 102. Paper. Price, 1s 6d net. Pp 43, with 3 illustrations. London: His Majesty's Stationery Office, 1926.

Summary of research by authoritative British research center.

Malignant Disease of the Testicle: Its Pathology, Diagnosis, and Treatment. By Harold R. Dew, M.B., B.S., F.R.C.S., Honorary Surgeon to Out Patients, Melbourne Hospital. Cloth. Price, $7 net. Pp. 168, with 52 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Handsomely illustrated monograph based on a 1923 prize essay.

Ruptura de Embarazo Tubario. Por el Dr. Velarde Pérez Fontana, Médico Cirujano de la Asistencia Pública. Tesis presentada al concurso de agregacion de cirugia. Paper. Pp. 144, with 18 illustrations. Montevideo, 1925.

Thesis on rupture of the fallopian tubes.

Modern Methods of Amputation. By Thomas G. Orr, A.B., M.D., F.A.C.S., Professor of Surgery, University of Kansas. Cloth. Price, $3.50. Pp. 117, with 125 illustrations. St. Louis: C. V. Mosby Company, 1926.

Practical monograph, well illustrated.

Handbook of Diseases of the Rectum. By Louis J. Hirschman, M.D., F.A.C.S., Professor of Proctology, Detroit College of Medicine. Fourth edition. Cloth. Price, $6.50. Pp. 403, with 252 illustrations. St. Louis: C. V. Mosby Company, 1926.

Fourth edition of a standard work.

The Development, Organization and Operation of the Bureau of Laboratories of the Michigan Department of Health. By C. C. Young, Dr.P.H., Director. A dissertation submitted in partial fulfilment of the requirements for the degree of Doctor of Public Health in the University of Michigan, January, 1924. Paper. Pp. 188, with illustrations. Lansing: Michigan Department of Health, 1925.

Medicolegal

Evidence of Injuries to Others—Use of Medical Works

(E. I. du Pont de Nemours & Co. v. White (U. S.), 8 Fed. R. (2d) 5)

The United States Circuit Court of Appeals, third circuit, holds that in this action, in which plaintiff White sued the defendant for alleged failure to take reasonable care to prevent the escape of noxious and poisonous gases in its factory where he worked, it was not error to admit the testimony of three other employees, who worked in the same rooms where he did, that the gases in those rooms produced practically the same effect on them as on him. In evidencing the quality of gas, such as phosgene and chlorine (to which the plaintiff alleged that he was subjected by the negligence of the defendant), by instances of its effects on others who worked in and inhaled it, the natural and logical limitation was that the evidential instances should have occurred under substantially the same circumstances; otherwise the ill effects might be attributed to the influence of some other element introduced by the differing circumstances. While in the use of this mode of proof unfair surprise and confusion of issues inevitably arise and often serve to exclude the evidence, yet the almost universal attitude of courts at the present time is to admit such evidence, subject to the limitation that the evidential instances took place under conditions substantially similar to the one in issue.

But it was error to permit the defendant's expert witness to be asked, in an effort to impeach him, whether or not he agreed with certain medical works on which he had not relied as authority for his testimony. The witness, a physician, who testified that he had seen many men who had been gassed with chlorine and phosgene, and that there was no case on record in which it had been established that the inhalation of gas produced fibrosis (which the plaintiff claimed to have as a result of such inhalation), was asked, while under cross-examination, if he differed *with an author from whose book* counsel read statements opposed to the views of the witness. Objection was made, but the witness was required to answer. The vice of the question was that it involved the admission of hearsay evidence, without giving the adverse party an opportunity to cross-examine the author. It is well settled in New Jersey that when a physician testifies from his own experience as an expert, he may not be impeached by medical works on which he has not relied as authority for his testimony. It is only when a witness refers to them for his own opinions that they are receivable in evidence, and then only for the purpose of contradicting him. The federal court here was administering New Jersey law, and in doing so it must be governed by the New Jersey rules of evidence, unless there was a federal rule to the contrary. But the federal rule and the New Jersey rule are the same on this subject. This testimony was therefore inadmissible and prejudicial.

Validity of Regulatory Statutes

(Butcher et al. v. Maybury, Director of Licenses (U. S.), Fed. R. (2d) 155)

The United States District Court, W. D. Washington, S. D., in denying an application for an injunction, says that the plaintiffs were drugless healers and this suit was brought to restrain the enforcement of chapter 10 of the session laws of Washington for 1925, which statute provides for the revocation under certain circumstances of licenses issued to drugless healers.

The right of a physician to practice his profession is a property right, of which he cannot be arbitrarily deprived. The right is a qualified one, and is held in subordination to the duty of the state under the police power to protect the public health. The police power cannot be stipulated or bartered away. The authorities hold without dissent that it is competent for the legislature to prescribe qualifications for those who are to practice medicine and thus to assure that they shall possess the requisite character and learning. The regulation of drugless healers is a proper exercise of the police power. The regulatory power of the state may be properly committed to an administrative board or officer. These regulatory statutes may be made operative on those engaged in practice prior to the enactment of the statutes. The state may change the qualifications from time to time, making them more rigid. The legislature may prescribe qualifications, as to both character and learning, which will require those in practice to give up their occupation. Legislation prescribing qualifications which a practitioner cannot meet because of conditions antedating the enactment of the legislation is valid. Such legislation does not constitute punishment; it is legitimate regulation. The limitation on the foregoing doctrines is the principle that the regulations must be reasonable and must bear some relation to the service to be rendered by the practitioner.

The changes in the qualifications of drugless healers, made by the act of 1925, were within the legislative discretion. *It is not unreasonable to exact a high school education or* its equivalent as a proper standard of general education. Nor is it an arbitrary exercise of legislative power to require a residence course of three sessions, consisting of thirty-six weeks each, in a school of approved standing. The power of the state to require a license implies the power to revoke a license that has been improperly issued. Provision for the revocation of such licenses is made by the act of 1919, whose constitutionality was not under attack. The statute in question merely changes the procedure required for such purpose. The act of 1925 provides for notice and hearing to a licentiate whose license is proposed to be revoked. He is entitled to the compulsory attendance of witnesses and to be represented by counsel. If the issue is determined against him, he has a right to review the action of the director of licenses in the superior court of Thurston County. This procedure abundantly meets the "due process" requirements of the fourteenth amendment to the constitution of the United States. The equal protection of the laws guaranteed by that amendment is secured if the laws operate on all alike, and do not subject the individual to an arbitrary exercise of the powers of government. The statute in question operates alike on all who come within its purview. The presumption is that in its enforcement the director of licenses will act fairly and from a good motive.

*A bill of attainder is a legislative act which inflicts punish*ment without a judicial trial. The statute in question inflicts no punishment. If plaintiffs lose the right to continue the practice of their profession, it will not be as a punishment for some offense committed by them, but because their qualifications do not measure up to the legislative requirements. Nor does the statute in question fall within the classification of ex post facto laws. It has been expressly held that a statute that makes provision for the cancelation of licenses of those engaged in the practice of medicine is not obnoxious to the ex post facto provision of the federal constitution.

Improper Joining of Physicians as Defendants

(Wilder et al. v. Shannon (Ala.), 106 So. R. 69)

The Court of Appeals of Alabama says that there were two reasons why a new trial should have been granted in this case, in which Mrs. Shannon, as executrix, obtained a judgment for damages for the death of her husband in October, 1918, which she alleged was proximately caused by the negligence of the defendants in and about the treatment of her husband, as an employee of a railroad company. In the first place, it is well *settled in Alabama that in actions of this kind the plaintiff* carries the burden of proof to show by the evidence (1) negligence, and (2) that injuries suffered were the proximate result thereof. In neither particular did the plaintiff discharge that burden in the instant case. The overwhelming weight of the evidence was to the effect that whatever injuries the plaintiff may have suffered were the direct result of the unprecedented and little understood influenza epidemic that swept over the country at the time of the death of her husband. In the second place, the action was in tort and brought against the two defendants jointly. This court found nowhere in the record any evidence showing or tending to show any community of design or interest existing between them. Any wrong committed by either of them seemed to be entirely separate secting is done with very fine instruments, under a binocular dissecting microscope, the parts being placed in suitable clearing mediums and stained in toto; that is, the entire object (uterus, heart, stomach) is stained and dissected. A number of beautiful photographs show the remarkable results obtained by the macromicroscopic methods described. They clearly show, for instance, the ganglionic plexuses in the walls of the heart and the bladder, the nerves of the tendons, and the ganglion cells in the stomach walls. In short, the topography of final nerve ramifications and their relationship to the ganglionic system is brought out with remarkable clearness. It is unquestionably a highly scientific and useful book, well written and excellently edited.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Chemistry in Agriculture: A Cooperative Work Intended to Give Examples of the Contribution Made to Agriculture by Chemistry. Edited by Joseph S. Chamberlain, Professor of Agricultural and Organic Chemistry, Massachusetts Agricultural College. Advisory Editor, C. A. Browne, Chief, Bureau of Chemistry, United States Department of Agriculture. Cloth. Price, $1. Pp. 384, with illustrations. New York: The Chemical Foundation, Inc., 1926.

Glorification of modern chemical advance by experts in various fields.

Puerperal Septicæmia: Its Causation, Symptoms, Prevention and Treatment. Being the Substance of a Thesis Submitted to the Royal Society of Medicine in June, 1924, and Awarded the Nicholls Prize. By George Geddes, M.D., C.M. Cloth. Price, $4. Pp. 200, with illustrations. New York: William Wood & Co., 1925.

Prize thesis reaching conclusion that only delivery by trained midwife in hospitals under medical supervision will lower still further deaths from puerperal sepsis.

Stauungstypen bei Kreislaufstörungen. Mit besonderer Berücksichtigung der exsudativen Perikarditis. Eine anatomische, experimentelle und klinische Untersuchung. Von Herbert Elias, Assistent an der I. med. Klinik, und Adolf Feller, Assistent am path.-anat. Institute. Paper. Price, 24 marks. Pp. 232, with 93 illustrations. Berlin: Julius Springer, 1926.

Research on exudative pericarditis and heart disease in general.

Nervous and Mental Disorders from Birth Through Adolescence. By B. Sachs, M.D., Consulting Neurologist to the Mount Sinai and Montefiore Hospitals, and Louis Hausman, M.D., Instructor in Neuro-Anatomy, Cornell University Medical College. Cloth. Price, $10 net. Pp. 861, with 110 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Consideration from neurologic point of view of nerve disturbances with highly conservative discussion of psychologic and psychiatric problems.

The Diagnosis, Treatment and End Results of Tuberculous Disease of the Hip Joint. By George Perkins, M.Ch., F.R.C.S., Assistant Surgeon to the Royal National Orthopædic Hospital. Cloth. Price, $1.75. Pp. 118, with 32 illustrations. New York: Oxford University Press, 1926.

Monographic essay, emphasizing recumbency, traction and fixation, combined with open air, hygiene and heliotherapy for treatment.

Advising the Tuberculous About Employment. By W. I. Hamilton, Personnel Director, Boomer-Dupont Properties Corporation, New York, and T. B. Kidner, Institutional Consultant, Technical Adviser, Central New England Sanatorium Association Industrial Settlement. Cloth. Price, $2. Pp. 171. Baltimore: Williams & Wilkins Company, 1926.

Suggestions on the adjustment of the handicapped to their occupational environment.

The Private Practitioner as Pioneer in Preventive Medicine: Being the annual oration of the Hunterian Society, 1926. By Sir George Newman, K.C.B., M.D., D.C.L. Paper. Price, 30 cents. Pp. 47, with 1 illustration. New York: Oxford University Press, 1926.

Emphasizing life of John Hunter and showing how general practitioner has helped to build our knowledge of preventive medicine.

The Bacteriophage and Its Behavior. By F. D'Herelle, M.D., Director of Laboratories at Alexandria, Egypt. Translated by George H. Smith, Ph.D., Associate Professor of Bacteriology and Immunology, School of Medicine, Yale University. Cloth. Price, $8. Pp. 629, with illustrations. Baltimore: Williams & Wilkins Company, 1926.

The last word, concluding with a chapter on phagotherapy for dysentery and staphylococcus infections in which the author deprecates premature commercial exploitation.

Young's Practice of Urology. Based on a Study of 12,500 Cases. By Hugh H. Young and David M. Davis. With the Collaboration of Franklin P. Johnson. Volumes I and II. Cloth. Price, per set, $25 net. Pp. 1484, with 1003 illustrations. Philadelphia: W. B. Saunders Company, 1926.

A monumental text based on vast personal experience and research, beautifully illustrated.

An Introduction to the Study of X-Rays and Radium. By Hector A. Colwell, M.B., D.P.H., Director of the Radiological Department, King's College Hospital, and Cecil P. G. Wakeley, F.R.C.S., F.R.S., Assistant Surgeon, King's College Hospital. Cloth. Price, $3.35. Pp. 203, with 37 illustrations. New York: Oxford University Press, 1926.

Handbook of elementary instruction on nature and application of radioactive substances.

The Endocrine Organs: An Introduction to the Study of Internal Secretion. Part II. The Pituitary; The Pineal; The Alimentary Canal; The Pancreas, and the Sex Glands. By Sir E. Sharpey-Schafer, LL.D., D.Sc., M.D. Second edition. Cloth. Price, $7. Pp. 177-418, with 117 illustrations. New York: Longmans, Green & Co., 1926.

Important contribution summarizing latest investigations, with critical comment.

Fibrilación y Flutter Auricular. Por el Dr. Manuel Vela González. Discurso de Recepción en la real Academia de Medicina de Sevilla. Discurso de Contestación del Dr. Vicente Hernández Irala, Académico Numerario. Paper. Pp. 65, with 33 illustrations. Seville, 1926.

Thesis on auricular fibrillation.

Neuritis and Neuralgia. By Wilfred Harris, M.D., F.R.C.P., Senior Physician to St. Mary's Hospital, and to the Hospital for Epilepsy and Paralysis, Maida Vale. Cloth. Price, $4. Pp. 418, with 45 illustrations. New York: Oxford University Press, 1926.

Practical consideration of common complaints, with useful suggestions on treatment.

Cæsarean Section. With a Table of 120 Cases. By Herbert R. Spencer, M.D., B.S., F.R.C.P., Consulting Obstetric Physician to University College Hospital. Cloth. Price, $2.75. Pp. 71, with 5 illustrations. New York: William Wood & Co., 1925.

Consideration of 120 cases, with an excellent historical introduction.

Medical Uses of Radium: Summary of Reports from Research Centres for 1924. Medical Research Council, Special Report Series, No. 102. Paper. Price, 1s. 6d. net. Pp. 43, with 3 illustrations. London: His Majesty's Stationery Office, 1926.

Summary of research by authoritative British research center.

Malignant Disease of the Testicle: Its Pathology, Diagnosis, and Treatment. By Harold R. Dew, M.B., B.S., F.R.C.S., Honorary Surgeon to Out-Patients, Melbourne Hospital. Cloth. Price, $7 net. Pp. 168, with 52 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Handsomely illustrated monograph based on a 1923 prize essay.

Ruptura de Embarazo Tubario. Por el Dr. Velarde Pérez Fontana, Médico Cirujano de la Asistencia Pública. Tesis presentada al concurso de agregacion de cirugia. Paper. Pp. 144, with 18 illustrations. Montevideo, 1925.

Thesis on rupture of the fallopian tubes.

Modern Methods of Amputation. By Thomas G. Orr, A.B., M.D., F.A.C.S., Professor of Surgery, University of Kansas. Cloth. Price, $3.50. Pp. 117, with 125 illustrations. St. Louis: C. V. Mosby Company, 1926.

Practical monograph, well illustrated.

Handbook of Diseases of the Rectum. By Louis J. Hirschman, M.D., F.A.C.S., Professor of Proctology, Detroit College of Medicine. Fourth edition. Cloth. Price, $6.50. Pp. 403, with 252 illustrations. St. Louis: C. V. Mosby Company, 1926.

Fourth edition of a standard work.

The Development, Organization and Operation of the Bureau of Laboratories of the Michigan Department of Health. By C. C. Young, Dr.P.H., Director. A dissertation submitted in partial fulfilment of the requirements for the degree of Doctor of Public Health in the University of Michigan, January, 1924. Paper. Pp. 188, with illustrations. Lansing: Michigan Department of Health, 1925.

Medicolegal

Evidence of Injuries to Others—Use of Medical Works

(E. I. du Pont de Nemours & Co. v. White (U. S.), 8 Fed. R. (2d) 5)

The United States Circuit Court of Appeals, third circuit, holds that in this action, in which plaintiff White sued the defendant for alleged failure to take reasonable care to prevent the escape of noxious and poisonous gases in its factory where he worked, it was not error to admit the testimony of three other employees, who worked in the same rooms where he did, that the gases in those rooms produced practically the same effect on them as on him. In evidencing the quality of gas, such as phosgene and chlorine (to which the plaintiff alleged that he was subjected by the negligence of the defendant), by instances of its effects on others who worked in and inhaled it, the natural and logical limitation was that the evidential instances should have occurred under substantially the same circumstances; otherwise the ill effects might be attributed to the influence of some other element introduced by the differing circumstances. While in the use of this mode of proof unfair surprise and confusion of issues inevitably arise and often serve to exclude the evidence, yet the almost universal attitude of courts at the present time is to admit such evidence, subject to the limitation that the evidential instances took place under conditions substantially similar to the one in issue.

But it was error to permit the defendant's expert witness to be asked, in an effort to impeach him, whether or not he agreed with certain medical works on which he had not relied as authority for his testimony. The witness, a physician, who testified that he had seen many men who had been gassed with chlorine and phosgene, and that there was no case on record in which it had been established that the inhalation of gas produced fibrosis (which the plaintiff claimed to have as a result of such inhalation), was asked, while under cross-examination, if he differed with an author from whose book counsel read statements opposed to the views of the witness. Objection was made, but the witness was required to answer. The vice of the question was that it involved the admission of hearsay evidence, without giving the adverse party an opportunity to cross-examine the author. It is well settled in New Jersey that when a physician testifies from his own experience as an expert, he may not be impeached by medical works on which he has not relied as authority for his testimony. It is only when a witness refers to them for his own opinions that they are receivable in evidence, and then only for the purpose of contradicting him. The federal court here was administering New Jersey law, and in doing so it must be governed by the New Jersey rules of evidence, unless there was a federal rule to the contrary. But the federal rule and the New Jersey rule are the same on this subject. This testimony was therefore inadmissible and prejudicial.

Validity of Regulatory Statutes

(Butcher et al. v. Maybury, Director of Licenses (U. S.), Fed. R. (2d) 155)

The United States District Court, W. D. Washington, S. D., in denying an application for an injunction, says that the plaintiffs were drugless healers and this suit was brought to restrain the enforcement of chapter 10 of the session laws of Washington for 1925, which statute provides for the revocation under certain circumstances of licenses issued to drugless healers.

The right of a physician to practice his profession is a property right, of which he cannot be arbitrarily deprived. The right is a qualified one, and is held in subordination to the duty of the state under the police power to protect the public health. The police power cannot be stipulated or bartered away. The authorities hold without dissent that it is competent for the legislature to prescribe qualifications for those who are to practice medicine and thus to assure that they shall possess the requisite character and learning. The regulation of drugless healers is a proper exercise of the police power. The regulatory power of the state may be properly committed to an administrative board or officer. These regulatory statutes may be made operative on those engaged in practice prior to the enactment of the statutes. The state may change the qualifications from time to time, making them more rigid. The legislature may prescribe qualifications, as to both character and learning, which will require those in practice to give up their occupation. Legislation prescribing qualifications which a practitioner cannot meet because of conditions antedating the enactment of the legislation is valid. Such legislation does not constitute punishment; it is legitimate regulation. The limitation on the foregoing doctrines is the principle that the regulations must be reasonable and must bear some relation to the service to be rendered by the practitioner.

The changes in the qualifications of drugless healers, made by the act of 1925, were within the legislative discretion. It is not unreasonable to exact a high school education or its equivalent as a proper standard of general education. Nor is it an arbitrary exercise of legislative power to require a residence course of three sessions, consisting of thirty-six weeks each, in a school of approved standing. The power of the state to require a license implies the power to revoke a license that has been improperly issued. Provision for the revocation of such licenses is made by the act of 1919, whose constitutionality was not under attack. The statute in question merely changes the procedure required for such purpose. The act of 1925 provides for notice and hearing to a licentiate whose license is proposed to be revoked. He is entitled to the compulsory attendance of witnesses and to be represented by counsel. If the issue is determined against him, he has a right to review the action of the director of licenses in the superior court of Thurston County. This procedure abundantly meets the "due process" requirements of the fourteenth amendment to the constitution of the United States. The equal protection of the laws guaranteed by that amendment is secured if the laws operate on all alike, and do not subject the individual to an arbitrary exercise of the powers of government. The statute in question operates alike on all who come within its purview. The presumption is that in its enforcement the director of licenses will act fairly and from a good motive.

A bill of attainder is a legislative act which inflicts punishment without a judicial trial. The statute in question inflicts no punishment. If plaintiffs lose the right to continue the practice of their profession, it will not be as a punishment for some offense committed by them, but because their qualifications do not measure up to the legislative requirements. Nor does the statute in question fall within the classification of ex post facto laws. It has been expressly held that a statute that makes provision for the cancelation of licenses of those engaged in the practice of medicine is not obnoxious to the ex post facto provision of the federal constitution.

Improper Joining of Physicians as Defendants

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The Court of Appeals of Alabama says that there were two reasons why a new trial should have been granted in this case, in which Mrs. Shannon, as executrix, obtained a judgment for damages for the death of her husband in October, 1918, which she alleged was proximately caused by the negligence of the defendants in and about the treatment of her husband, as an employee of a railroad company. In the first place, it is well settled in Alabama that in actions of this kind the plaintiff carries the burden of proof to show by the evidence (1) negligence, and (2) that injuries suffered were the proximate result thereof. In neither particular did the plaintiff discharge that burden in the instant case. The overwhelming weight of the evidence was to the effect that whatever injuries the plaintiff may have suffered were the direct result of the unprecedented and little understood influenza epidemic that swept over the country at the time of the death of her husband. In the second place, the action was in tort and brought against the two defendants jointly. This court found nowhere in the record any evidence showing or tending to show any community of design or interest existing between them. Any wrongs committed by either of them seemed to be entirely separate and distinct from any committed by the other, and no reason appeared for joining them as defendants. A consideration of the whole record leads the court to the conclusion that the verdict and judgment for the plaintiff were founded in error, and ought not to stand.

Right to Have Expert Examine Injured Part Shown Jury

(Fleming et ux. v. Holleman et al. (N. C.), 130 S. E. R. 171)

The Supreme Court of North Carolina says that plaintiff Fleming, who was seeking to recover damages for personal injuries, while testifying that his injured leg was then swollen, pulled up his trousers and exhibited his leg to the jury. He also indicated a place between the knee and the ankle where the leg was broken. Then he said that there was a difference in the color of the two legs and that "when you press on this injured leg the dent will stay in, . . . the other leg is not like that. There is not much feeling in the injured leg. The most severe pain is right across here" (indicating broken place). After his testimony and that of one of the physicians who had treated him after the injury, the attorneys for the defendants tendered to the plaintiff two physicians and asked leave of the court for them to examine the plaintiff either in the presence of the injury or in a back room. Counsel for the plaintiff asked that this be done in the presence of the physician first mentioned. But the court declined to order the plaintiff to be examined, it appearing that one of the physicians selected by the defendants refused to go to the office of the plaintiff's physician, as there seemed to be some feeling between the two.

Under the facts and circumstances of this case, the supreme court thinks that the defendants had a right to have an expert examine the plaintiff's injured member. This right does not extend except to the injured member or part of the body that the plaintiff voluntarily exhibits to the jury. In the trial of all cases, the purpose is to ascertain the truth. The "inviolability of the person" is not lightly to be impinged; but, when a plaintiff voluntarily waives the inviolability by exposing his person to accentuate the damage, it is but justice that, at the instance of a defendant who may suffer by the exposure, there be expert examination.

Frequently attorneys representing opposing sides in injury cases agree to an examination in the interest of truth and justice, and the practice has become in recent years prevalent and to be recommended. This court has been unable to find any authority when this court has before passed on the question here presented. But, under the circumstances of this case, this court holds that, when the plaintiff voluntarily exhibited the injured member or part of the body to the jury, the defendants had a right to the examination. It is for the trial court in its discretion to allow the examination "under reasonable restrictions"—in the presence of the jury. One of the defendants' requests was "in the presence of the jury." The old saying is applicable: "What is sauce for the goose is sauce for the gander." This court thinks that the weight of authority permits expert examination before the jury under the facts here.

Action on Account for Services "by Order"—"M.D."

(Becker v. Humphries (Ga.), 130 S. E. R. 379)

The Court of Appeals of Georgia, division 2, in affirming a judgment in favor of plaintiff Humphries, says that he sued defendant Becker on an account for $570, and obtained a verdict for $310. The account was for $470 for "visits to J. D. Skinner on order," in December, 1918, and $100 for another physician, "to consultation to order of J. H. Becker." Counsel for the defendant contended that the petition failed to set forth a cause of action because there was no allegation that the plaintiff had been licensed to practice medicine in Georgia. But the court thinks that the allegation was unnecessary. In the first place, it appeared that the physician was located in the state of Florida, and the petition did not show that he practiced in Georgia. The account was for medical services rendered to one J. D. Skinner, without disclosing where they were rendered. So far as appeared from the petition, the patient may have been in Florida or elsewhere. But, regardless of this, it seems to be the rule that in an action by a physician for the value of professional services rendered by him it is sufficient to allege that he is a physician, that he was employed as such, that he rendered the services alleged, and that the reasonable value thereof was the amount sued for. By the weight of authority it was not necessary that the petition should go further and show that he had a license to practice according to the legal requirements of the state in which the services were performed. Of course, if it appears that the physician was practicing without a license, in violation of statute, he cannot recover. But this would ordinarily be a matter of defense. The copy of the account, which was expressly made a part of the petition, showed that the plaintiff was an "M.D.," and this court will take judicial notice that this abbreviation imports prima facie that the plaintiff was a physician.

Again, it was contended that it appeared from the petition that the plaintiff was claiming a liability against the defendant for professional services rendered to a third person, for which it was insisted that the plaintiff could not recover without showing an express agreement by the defendant to pay for the same. Even if so, the petition was sufficient to withstand the attack of a mere general demurrer based on this ground. It alleged that the defendant was indebted on the account, and that the services were rendered "on order," the reasonable inference being that the order was that of the defendant. Furthermore, suit on an open account may be sustained though the evidence shows an express agreement, where it is proved that the plaintiff has fully performed his part of the agreement and nothing remains to be done except for the other party to make payment. In the nature of the action it was not necessary for the plaintiff to allege an express agreement by the defendant to pay, irrespective of whether such agreement should be proved to entitle him to recover. As against the contentions which the defendant made the court holds that there was no error in overruling his general demurrer.

Then, while the evidence failed to show an express promise, the other circumstances in this case, as disclosed by the evidence, were sufficient to authorize an inference of an intention by the parties, at the time, that the services were to be furnished on the defendant's credit. It appeared that Skinner was living on the defendant's farm, but was not an employee. There was no relation between the defendant and the patient such as would raise a legal obligation on the defendant's part to procure and pay for the services of the physician for him. The preponderance of authority is to the effect that a mere request by one person to a physician to render services to another person, to whom the person making the request is under no obligation to supply the same, will not raise an implied promise, in favor of the physician, to pay for the services when rendered. A humane policy encourages the summoning by others of medical aid for those who may be stricken and unable to act for themselves. It would be quite easy in such a case for the physician to inquire whether the person making the request intends to become personally bound and when he fails to do so has no one to blame except himself for having acted on a mere request without an assurance that the party making it intends to incur a personal liability. The physician should remember that persons commonly call for medical aid for the sick solely out of a spirit of kindness, irrespective of relationship, and without any expectation of becoming personally responsible. But the instant case was not one of a mere request for the rendition of services and a compliance therewith by the physician. The circumstances authorized the inference of an intention that the defendant should be liable.

Sticking of Needle into Paralyzed Arm Before Jury

(Anthony v. Public Transit Co. (N. J.), 130 Atl. R. 895)

The Supreme Court of New Jersey holds that, in this action to recover damages for personal injuries where the plaintiff suffered a fracture of his right arm which subsequently resulted in a partial paralysis of the arm, it was not error for the trial court to permit a needle to be stuck into the arm in view of the jury to show that the plaintiff was suffering from paralysis and that his arm lacked sensation. This was a matter within the discretion of the court.

Society Proceedings

COMING MEETINGS

American Association of Industrial Physicians and Surgeons, Philadelphia, May 24-26. Dr. F. L. Rector, 22 East Ontario Street, Chicago, Secretary.
American Bronchoscopic Society, Montreal, Canada, May 29. Dr. Henry B. Orton, 671 Broad Street, Newark, N. J., Secretary.
American Dermatological Association, Philadelphia, May 27-29. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.
American Laryngological Association, Montreal, Canada, June 3-5. Dr. George M. Coates, 1811 Spruce Street, Philadelphia, Secretary.
American Laryngological, Rhinological, and Otological Society, Montreal, Canada, May 31-June 2. Dr. Robert L. Loughran, 145 West 58th Street, New York, Secretary.
American Neurological Association, Atlantic City, June 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.
American Ophthalmological Society, Hot Springs, Va., June 14-16. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.
American Orthopsychiatric Association, New York City, June 5-6. Dr. Karl A. Menninger, Mulvane Building, Topeka, Kansas, Secretary.
American Otological Society, Montreal, Canada, May 31-June 3. Dr. Harold Walker, 390 Commonwealth Avenue, Boston, Secretary.
American Pediatric Society, Niagara Falls, Canada, May 31-June 2. Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia, Secretary.
American Psychiatric Association, New York City, June 8-11. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.
American Psychopathological Association, New York City, June 11. Dr. Sanger Brown II, 173 East 70th Street, New York City, Secretary.
American Surgical Association, Detroit, May 24-26. Dr. R. B. Greenough, 8 Marlborough Street, Boston, Secretary.
American Therapeutic Society, Philadelphia, June 10-12. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Secretary.
Maine Medical Association, Poland Springs, June 10-12. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.
Massachusetts Medical Society, Springfield, June 8-9. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Library Association, Ann Arbor, Mich., June 8-9. Miss Harriet Wilson, 535 North Dearborn Street, Chicago, Secretary.
Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
National Association for the Study of Epilepsy, New York City, June 7-8. Dr. A. L. Shaw, 108B The Albiston, Utica, N. Y., Secretary.
New Hampshire Medical Society, Concord, May 25-26. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 17-19. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
North Carolina, Medical Society of the State of, Wrightsville Beach, June 15-17. Dr. L. B. McBrayer, Southern Pines, Secretary.
North Dakota State Medical Association, Minot, May 25-26. Dr. A. J. McCannel, Minot, Secretary.
Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
Texas, State Medical Association of, Houston, May 24-27. Dr. Holman Taylor, 207½ West 11th Street, Fort Worth, Secretary.
West Virginia State Medical Association, Morgantown, May 25-27. Mr. S. O. Neale, 211 Smallridge Building, Charleston, Executive Secretary.
Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Twentieth Annual Meeting, held at New York, March 30-April 1, 1926

(Continued from page 1577)

Experimental Production of Lung Abscess

Drs. Elliott C. Cutler, Simon A. Schlueter and I. F. Weidlein, Cleveland: Lung abscess can be reproduced in animals extremely well by the use of infected emboli, but we failed to produce lung abscess by the introduction of infected material and various types of organisms. In fifteen experiments not a single lung infection was produced. We believe that a certain number of postoperative lung abscesses may be due to infected emboli from the operative field. If this is so, such complications can only be reduced; they can never be totally avoided. The gentle handling of tissue, careful surgical technic and the greatest asepsis will reduce the morbidity from lung abscess.

DISCUSSION

Dr. James Morley Hitzrot, New York: I have long felt that aspiration does not explain the formation of these pulmonary suppurations as well as does embolism.

Dr. Howard Lilienthal, New York: The ordinary lung abscesses resulting from blood infection are multiple in character; those resulting from surgical operations (aspiration?) are usually single, or there are two or three discrete foci, sometimes on both sides, but ordinarily only in one lobe. That seems to me to be better explained by the inhalation theory than by the mere accidental entrance of organisms into the blood stream.

Dr. Paul W. Aschner, New York: One cannot explain the abscesses that occur in clean surgical cases on the basis of embolism because these emboli are aseptic. They produce ordinary infarction, and only rarely does secondary infection occur in an aseptic pulmonary infarction. Dr. Cutler's experiments are most ingeniously conceived and executed, but from a study of human pathologic material, I cannot subscribe to the view that postoperative lung suppuration is dependent, as a rule, on embolism.

Dr. M. C. Myerson, New York: I am strongly in favor of the aspiration route of infection. Pulmonary complications probably follow aspiration if there is some condition in the smaller bronchioles of the lung tissue that will prevent the expulsion of aspirated material. There is such a thing as congenital bronchiectasis, dry bronchiectatic cavities which exist unsuspected. It is on this lesion that a pulmonary suppuration may become superimposed in the presence of a general anesthesia.

Liver Function Studies

Dr. Charles S. McVicar, Rochester, Minn.: In studying liver function it must be remembered that laboratory tests supplement, but do not displace, clinical observation. Bile pigment is considered to be formed of broken down hemoglobin; that is, hemoglobin without iron. The product is manufactured by the reticulo-endothelial system, represented by cells of spleen and bone marrow. With the liver entirely removed, the bile pigment is formed but is not excreted; therefore the liver is mainly an excretory organ. In hemolytic jaundice there is more bile pigment formed than the liver can excrete, and the bile is dammed back into the blood stream. Tests for liver function include the Vandenburg test, which gives an estimate of the bilirubin curve in the patient and is used as an indication for or against operation; thus, a rising bilirubin curve indicates danger of congestion and hemorrhage and warns against operation; a declining curve shows indication for operation. The dye retention test does not coincide with the amount of jaundice, for with slight jaundice there may be considerable dye retention. In cirrhosis there is often much dye retention. The method of cholecystography is founded on the amount of dye excreted by the liver. The opaque substance is taken with the evening meal, and the time it takes to reach the gallbladder is estimated. A diseased gallbladder may partially fill, but in severe cases of liver obstruction the opaque substance does not reach the gallbladder. In such cases, intravenous glucose injection may prolong life. In regard to urea excretion tests, experimental work has shown that in severe cases of retention a limited nitrogenous intake is not called for.

DISCUSSION

Dr. Howard Shattuck, New York: Recent progress has enlarged our understanding of liver function, but much remains to be done. The quantitative estimation of bile salts in the blood is very much needed and will increase our understanding of the relation of the bile salts to liver disease. When surgical intervention is contemplated on the liver or bile passages, careful tests should be made, as we often see fatal results as a result of failure to comply with such a program. I should like to ask Dr. McVicar how often he sees cases of cholemia among the group of operative patients previously tested as he describes.

Dr. A. Diamond, New York: In making liver function tests we must allow for the fact that the liver possesses a large reserve of safety, and in speaking of one function we must remember that the liver accommodates itself to the performance of either function while the other is affected. Thus, in considering the Rosenthal-Rowntree method we must admit that in many instances it does not tell us what is taking place in the liver, but simply what dye cannot get through; the latter fact may be simply due to mechanical obstruction in the common duct or a growth in the ampulla of Vater. The improvement in the urobilogen test in the urine was worked out by Wallace and myself. It is important as a test f telling us what is taking place in the liver parenchyma, so that we can differentiate between mechanical obstruction in the common duct or that due to parenchymatous change in the liver, such as catarrhal jaundice. The urobilogen rises very high in the urine because there is never complete stenosis of the common duct. On the other hand, in carcinoma of the pancreas obstruction is complete and no bile gets into the intestine; therefore, no urobilogen is found in the urine. This is a simple test and can tell us promptly whether it is mechanical obstruction, such as carcinoma, or a catarrhal formation in the liver.

Dr. Charles S. McVicar, Rochester, Minn.: In regard to the question about cholemia, I did not mention cholemia and I do not know that I can discuss it. Undoubtedly there is a hazy condition of liver insufficiency which may be thought to be comparable to uremia, but it is not very clear cut. There is a condition of liver failure which is not due to hypoglycemia. The hepatectomized dog shows a certain decline of blood sugar, but patients rarely do. In regard to urobilogen, before we can assume results of these functional tests, we must first prove that urobilogen is formed in the intestine and also in the bile passages. Urobilogen is formed in the ducts, but may be it has to go into the intestine to be absorbed.

Neuron Block for Relief of Pain: Its Use in Angina Pectoris

Dr. George I. Swetlow, Brooklyn: This method has been used to relieve pain in angina pectoris, in the gastric crises due to syphilis, in pleurisy, in laryngeal pain due to tuberculosis, in cancer of the tongue, and in many other conditions. The work of neuron blocking is founded on the anatomic basis that the nerves of the various sympathetic ganglions enosculate with one another. If certain fibers are extirpated, others will take it up and the irritation will pass into the centers of consciousness in the form of pain. There is pain in the skin area supplied by the dorsal root which is adjacent. Therefore, if one can locate the dorsal root ganglion that is receiving the painful stimulation one can intercept the painful stimulus from entering the spinal cord, and thus prevent its reaching the brain. This method was tried in eight patients suffering from severe cardiac conditions, six of whom had coronary thrombosis. Four patients died later, but they were in very serious condition. In the cases of gastric crises, the painful stimulus starts in the epigastric plexus. Injection of the dorsal root here gave good results in preventing pain. In cases of severe pleuritic pain in tuberculosis or carcinoma of the pleura, the pain was relieved. In one case, cancer of the tongue, the pain was not relieved.

DISCUSSION

Dr. John Wyckoff, New York: The criticism aimed at this method is that it does not cure; it is merely palliative. In regard to any measure of this kind we have to ask ourselves: 1. What is the inconvenience or danger? 2. What is the quantitative or qualitative relief? If the relief is not greater than the danger or inconvenience, then relief is of no value. With the use of surgery, the danger or inconvenience to most patients is greater than the relief received. The patients, even if relieved of pain, must die eventually; therefore this procedure does not lengthen life. The physician must consider that the patient is suffering from a malady in which sudden death is likely to occur, and he must be willing to bear the brunt of criticism if the patient dies suddenly after such treatment has been tried.

Dr. Alexander Lambert, New York: Many more people are arriving at years of senescence; therefore there are many more suffering from cardiac symptoms than formerly. We may be able to give relief from pain to many of these people, if we cannot do more for them. The pain in the anginal syndrome is not due to a similar process in all cases. To understand the anginal syndrome we must study the sympathetic system as part of the general nervous system. It has its efferent and afferent fibers, but the gangilons are motor ganglions and are out at the periphery. Therefore, to stop the pain one must reach the posterior root of the spinal nerve and at that point one can head off the pain before it reaches the thalamus. This is where Dr. Swetlow's procedure is of use. Operations on anginal patients have succeeded in some cases; in some they have failed because of the fact that every nerve is not the same in every man. The superior cardiac nerve of the sympathetic has been cut and has stopped the pain in some cases. When one cuts off the superior sympathetic ganglion one cuts off the ganglion of several sympathetic centers, such as the high carotid sphenopalatine ganglion, which is a very valuable portion of the sympathetic and should not be lightly discarded. Therefore blocking is better than taking out what cannot be replaced. One strikes at the accessory fibers of the heart which help in the conductivity and contractility of the ventricles, and one leaves the heart with inhibitory fibers. The result of this is that the patient dies with great edema of the lung. The superior thoracic ganglion should not be touched at all. Something very valuable has been cut off, but one can cut above that. One can cut off afferent fibers that go to the vertebral arteries. In such a case blocking is wiser than cutting. When there is pain coming from coronary disease, the afferent fibers can be cut out. If there is pain in the epigastrium and in the arms, it comes from the same dorsal segments that the splanchnic supplies and cannot be reached. They go behind and cannot be blocked off. About 10 per cent of coronary patients have pain in the arms. In 300 cases of coronary thrombosis only 25 per cent gave previous warning that they had cardiac disease; but when the pain is intense it is worth while to take the chance of blocking the impulse before taking the chance of cutting with the possible result of edema of the lung.

Chronic Nephritis

Dr. Nellis B. Foster, New York: Heart disease heads the list of causes of death. It is often combined with chronic nephritis. Recognition of this condition in hospital patients *is not enough. The treatment at that stage is merely palliative.* The disease has then been of long duration because the subjective symptoms are slight and the disease escapes early detection. Life insurance companies discover many early cases, and make a practice of rejecting patients who show an albuminuria. The insurance companies can prove that there is an earlier death rate among persons showing albuminuria, although, if it occurs before 30, it is as likely to be tuberculosis as nephritis. After 40, no case of albuminuria can be dismissed even if there is no sign of elevation of blood pressure. Insurance figures show that an increase of 10 degrees in blood pressure is equal to an increase in mortality rates of from 10 to 14 per cent.

DISCUSSION

Dr. John A. Lichty, Clifton Springs, N. Y.: The family physician has been impressed that the study of urine is a very complex matter requiring chemical apparatus, so that he avoids doing the very simplest test to determine whether or not the patient has nephritis. From the time of Bright to the present day, the studies in kidney disease have centered largely about the other elements of the urine, such as albumin, casts, various cells, uric acid, urea toxins, and the elimination of dyes. After this came the chemical studies of the blood, including urea, uric acid and creatinine, all interesting and somewhat helpful, but none giving any earlier evidence of chronic nephritis than the study and comparison of the day and night urine—the so-called fixation and concentration test. Dr. Roger Hubbard recently completed an extensive study of seventy cases of nephritis of all forms, applying all the tests in common use, and in some of which necropsies were done, with the result that there was revealed an interesting sequence of positive findings as the disease progressed; but not a single test gave earlier evidence of kidney disease than the fixation and concentration test. In fact, it seemed that the more difficult and complex the test the less helpful it was in showing early involvement of the kidney. If the purpose is only to determine the margin of safety for a patient undergoing the stress and strain of disease or experiencing the ordinary crises of life, most of the reliable tests for kidney function may be of use; but the test which gives the earliest evidence of kidney disease is the one most desirable.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1924. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

9: 157-240 (March) 1926

Limitations of Slit Lamp Microscopy of Living Eye and Possibility of Overcoming Them. L. Koeppe, Rochester, N. Y.—p. 157.
Glioma of Retina. C. W. Rutherford, Indianapolis.—p. 171.
Operations for Glaucoma. S. A. Durr, San Diego, Calif.—p. 174.
Field and Fundus Changes in Endocrine Dysfunction. W. D. Rowland, Boston.—p. 178.
Choked Disk and Vitreous Opacities Following Fracture of Skull. C. Loeb, Chicago.—p. 184.
Senile Cataract Extraction. E. A. Knorr, Baltimore.—p. 186.
Relation of Aperture of Eye to Ocular Function. A. Cowan, Philadelphia.—p. 191.
Use of "Afenil": A Warning. L. L. Mayer, St. Louis.—p. 192.

American Journal of Public Health, Albany, N. Y.

16: 98-206 (Feb.) 1926

Advances in Sanitary Practices. W. F. Walker, New York.—p. 97.
Laboratory Differentiation of Smallpox and Chickenpox. T. G. Hull and R. W. Nauss.—p. 101.
Progress in Health Education and Publicity. J. A. Tobey, Washington, D. C.—p. 106.
Vitamin Content of Foodstuffs. W. H. Eddy, New York.—p. 109.
Value of Physical Examination of Food Handlers. L. B. Gloyne, Kansas City, Kan.—p. 115.
Relation of Health Departments to Industrial Hygiene. C. T. Graham-Rodgers, New York.—p. 117.
Program Planning. N. M. Harris, Ottawa.—p. 121.
Method of Analyzing Statistical Data by Coding and Adding Machine. R. Jordan, New Haven, Conn.—p. 123.
Recent Developments in Industrial Hygiene. H. F. Smyth, Philadelphia.—p. 126.
Laboratory in Public Health Work. S. C. Prescott, Cambridge, Mass.—p. 130.
Interference with Schick Test. J. A. Tobey, Washington, D. C.—p. 134.
Chlorine Treatment of Contaminated Oysters. C. Krumwiede, W. H. Park and others, New York.—p. 142.
Use of Organic Mercurials, Particularly Mercurochrome. E. C. White, Baltimore.—p. 153.

American Journal of Psychiatry, Baltimore

5:345-467 (Jan.) 1926

Laboratory Method in Psycho-Analysis. T. Burrow, Baltimore.—p. 345.
Psychotic Children: Treatment and Prophylaxis. A. A. Brill, New York.—p. 357.
Intensive Use of Bromides in Functional Psychoses. W. W. Wright, Utica, N. Y.—p. 365.
Newer Psychiatry. W. Healy, Boston.—p. 391.
Psychiatric Departments in General Hospitals. G. K. Pratt, Boston.—p. 403.
Nonmedical Workers and Mental Hospital. H. C. Woolley and R. W. Hall, Washington, D. C.—p. 411.
Research Problems in Epilepsy. C. E. Gibbs, New York.—p. 415.
Epileptoid Reactions in Children. V. C. Branham, Ellenville, N. Y.—p. 423.
Record of Jesse Murphy: Desperate Felon. N. S. Yawger, Philadelphia.—p. 431.

American Review of Tuberculosis, Baltimore

13: 193-291 (March) 1926

Modern Sanatorium Treatment of Tuberculosis as Applied in Fitzsimons General Hospital. E. H. Bruns, Denver.—p. 193.
*Case of Limited Miliary Tuberculosis. J. V. Falisi, Denver.—p. 211.
*Recovery from Tuberculous Meningitis. B. T. McMahon, New York.—p. 216.
Syphilis of Lung: Four Cases. R. C. Kirkwood, Salt Lake City.—p. 220.
Treatment of Bilateral Lung Suppuration. J. J. Singer and E. A. Graham, St. Louis.—p. 225.
*Pneumoperitoneum in Treatment of Tuberculous Peritonitis. O. M. Guilbert, Boulder, Colo.—p. 240.
Adaption of Kolmer-Wassermann Technic to Tuberculosis Complement Fixation. J. S. Woolley and F. G. Petrik, New York.—p. 243.
*Standardization of Tuberculin. J. D. Aronson, Philadelphia.—p. 263.
Extent of Normal Variability of Vital Capacity of Lungs of Children. C. A. Stewart, Minneapolis.—p. 272.
Vital Capacity of Lungs of Children Having Masked Juvenile Tuberculosis. C. A. Stewart, Minneapolis.—p. 278.

Limited Miliary Tuberculosis.—In Falisi's case the original focus of tuberculosis was an apparently small but active lesion in the right lung. From this hematogenous dissemination, the disease was apparently limited to the choroid plexus and base of the brain.

Recovery from Tuberculous Meningitis.—The case recorded by McMahon was typically clinical meningitis in its onset and symptomatology. The presence of tubercle bacilli in the spinal fluid, as shown by animal inoculation, proved it to be tuberculous. The unusual features were the number of exacerbations and remissions. The disappearance of tubercle bacilli from the spinal fluid suggested circumscription and encapsulation of the lesions. The small number of bacilli and the absence of meningeal hypertension indicated that the lesion was not predominantly of the exudative type, but possibly proliferative in character.

Pneumoperitoneum in Treatment of Tuberculous Peritonitis.—Guilbert has treated four cases of tuberculous peritonitis with serous effusion by aspiration of the fluid and the introduction of filtered air. These patients have remained well and are working, one after five years, and one for nearly two years. The remaining two cases are very recent ones. In one case both a pneumoperitoneum and a pneumothorax have been done. Guilbert has also used pneumoperitoneum in connection with laparotomy in two cases of advanced tuberculous enterocolitis, with apparently some relief but no permanent benefit, as both patients died.

Standardization of Tuberculin.—The strength of nine samples of commercial tuberculin and one sample of standard tuberculin was determined by Aronson by means of the intracutaneous injection into tuberculous guinea-pigs, and compared with their toxicity for tuberculous guinea-pigs, with complement fixation, and with the precipitin reaction. These samples of tuberculin varied greatly in strength.

Archives of Internal Medicine, Chicago

37: 297-450 (March 15) 1926

Experimental Renal Insufficiency. H. Anderson, Duluth.
  *I. Controls on Normal Diet.—p. 297.
  II. Protein Diet Experiments.—p. 313.
*Hemochromatosis and Chronic Poisoning with Copper. F. B. Mallory, Boston.—p. 336.
*Primary Carcinoma of Liver. V. S. Counseller and A. H. McIndoe, Rochester, Minn.—p. 363.
*Effect of Liver Damage on Cholecystography in Dogs by Use of Sodium Tetraiodophenolphthalein. B. M. Fried and L. R. Whitaker, Boston.—p. 388.
*Carbon Monoxide Poisoning: Treatment. D. C. Walton, W. A. Eldridge, M. S. Allen and M. G. Witherspoon, Edgewood, Md.—p. 398.
*Enzymic Activity of Duodenal Contents Following Ingestion of Pancreatin. A. H. Aaron, J. V. Wadsworth and H. C. Schneider, Buffalo.—p. 408.
Relation of Thrombocytes to Hemorrhagic Diathesis. I. W. Held, New York.—p. 414.
*Value of Starch-Iodine Reaction as Test of Pancreatic Function. G. M. Piersol, H. L. Bockus and H. H. Shay, Philadelphia.—p. 431.
*Metabolic Aspects of Calcium Therapy. A. P. Briggs, St. Louis.—p. 440.
*Effects of Intravenous Injections of Acriflavine in Sepsis. C. F. Tenney and J. Lintz, New York.—p. 445.

Experimental Renal Insufficiency.—The purpose of Anderson's study was (*a*) to determine the blood pressure changes in low renal function or insufficiency and (*b*) to determine the possible influence of high or low protein diet on the course of chronic renal disease. He found that removal of two thirds of the kidney substance in rabbits results in a retention in the blood of urea and creatinine, which either increases progressively in intensity until death results, or decreases progressively until normal values are once more attained. A high protein diet causes hypertrophy of the kidneys in normal rabbits not operated on, but no further change in the kidney remnant than to further augment the hypertrophy. A high protein diet causes a retention of creatinine and urea in the blood in rabbits from which a portion of kidney substance has been removed. It is proportionate to the amount of kidney that has been removed. Hypertension is not caused in rabbits by renal insufficiency per se, nor by a high protein diet, even in the presence of a low renal function, nor by prolonged retention of creatinine and urea in the blood. The high protein diet here give results in a marked atherosclerosis of the aorta which do not extend to the small arteries. These changes in the aorta do not result from low renal function or from prolonged retention of creatinine and the urea in the blood.

Copper Poisoning Causes Hemochromatosis.—Mallory points out that evidence is slowly but steadily accumulating in favor of the view that chronic poisoning with copper causes the symptom complex known under the different names of hemochromatosis, bronzed diabetes and pigment cirrhosis. Copper is an exceedingly useful and indispensable metal in many ways, but it should not be employed where it may come in contact with foods or drinks, especially if they contain acids of any sort, because it is so readily dissolved by many of them. This would exclude its use for cooking utensils of any sort, for shakers of cocktails and acid drinks, and for the worms of the condensers in stills. Its use in pipes for drinking water and for hot water heaters is probably without danger.

Carcinoma of Liver.—Five cases of primary carcinoma of the liver are described by Counseller and McIndoe. Four were hepatomas or primary carcinomas of the liver cells, and one was a cholangioma or carcinoma of the bile ducts. These cases occurred among 5,976 necropsies, together with 220 cases of secondary carcinoma of the liver and 127 cases of portal cirrhosis. The five cases reported were associated with intrahepatic metastasis by way of the portal and the hepatic veins, but in only two cases were extrahepatic growths present. All the cases were associated with cirrhosis of the portal type. The histories in three cases point to a preceding cirrhosis, and in all these cases the microscopic examination of the connective tissue indicated a long standing process. The relation between the hyperplastic liver tissue and the malignant cells is emphasized. The authors believe that from 3 to 4 per cent of cases of cirrhosis, particularly of the portal type, will become carcinomatous.

Cholecystography and Liver Disease.—The results noted by Fried and Whitaker have shown that a moderately damaged liver does not interdict the use of sodium tetraiodophenolphthalein. The existence of presumed or obvious hepatic disease in man should not necessarily preclude the employment of the drug for purposes of cholecystography in the clinic.

Treatment of Carbon Monoxide Poisoning.—There is a difference of opinion as to the relative value of the different treatments of carbon monoxide poisoning. Walton and his associates endeavored to determine relative values by means of experiments on dogs. It was found that in dogs suffering from carbon monoxide asphyxia the difference in elimination time between oxygen treated and oxygen plus 5 per cent carbon dioxide treated subjects is slight. Since the rate of elimination under pure oxygen is almost as rapid as with the oxygen plus 5 per cent carbon dioxide, and since the oxygen treatment is more readily obtainable, it is recommended that its use be continued, particularly in localities where transportation is difficult. The air plus 5 per cent carbon dioxide treatment should be of value for rescue parties sent to inaccessible mines, and especially in military operations.

Enzymic Activity of Ingested Pancreatin.—Aaron et al. concluded that a properly prepared and ingested pancreatin solution will pass through the stomach rapidly enough to insure the retention of a considerable portion of its original proteolytic, lipolytic and amylolytic activity when it reaches the duodenum.

Iodine Test of Pancreatic Function.—Piersol et al. used the Barsler test but modified it by increasing the amount of iodine solution added to each of the ten tubes by 0.05 cc. (1 drop) so that 10 drops, or 0.5 cc., are added to the tenth tube. It is asserted that with the modifications it has been possible to obtain consistent results from day to day on the same patient even though the iodine absorption factor varied greatly.

Metabolic Aspects of Calcium Therapy.—Briggs asserts that calcium acetate given by mouth causes the diversion of a considerable amount of the excreted phosphoric acid from the urine to the feces. The relief from this phosphoric acid load necessitates the synthesis of a smaller amount of ammonia by the kidney. The administration of calcium acetate affords a means of correcting the phosphoric acid retention in nephritis free from the disadvantages of alkali retention and resulting edema which is observed with sodium bicarbonate therapy.

Effect of Acriflavine on Sepsis.—Of eleven patients with generalized infection who were treated by Tenney and Lintz with intravenous injections of neutral acriflavine, six had positive blood cultures. Of these six, five died despite the treatment. The sixth case, one of typhoid fever, ran the usual course, and showed no shortening of the time necessary to procure negative stool cultures for release from quarantine. The authors have seen no improvement following the intravenous use of neutral acriflavine in cases of sepsis or bacteremia. There was spontaneous recovery in two cases of *Streptococcus hemolyticus* sepsis.

Archives of Neurology and Psychiatry, Chicago

15: 281-404 (March) 1926

Meninges in Lower Vertebrates Compared with Those in Mammals. C. U. A. Kappers, Amsterdam.—p. 281.

*Encephalitis Periaxialis Diffusa of Schilder: Case. S. Brock, P. M. Carrol and L. Stevenson, New York.—p. 297.

*Spontaneous Escape of Cerebrospinal Fluid Through Nose: Occurrence with Brain Tumor. C. E. Locke, Jr., Cleveland.—p. 309.

*Bulbocapnine: Use in Treatment of Tremor and in Experimental Production of Basal Ganglion Symptomatology. H. Mella, Boston.—p. 325.

*Presence of Oxytocic Substance (Posterior Hypophysis Extract) in Cerebrospinal Fluid. S. Shapiro, New York.—p. 331.

*Toxemias Occurring in Early Stages of Mental Disease. H. D. McIntyre, A. P. McIntyre and R. J. Norris, Cincinnati.—p. 341.

*Spinal Fluid in Epilepsy: Fifty Cases. H. A. Patterson and P. Levi, Sonyea, N. Y.—p. 353.

*Xanthochromia in Epidemic Encephalitis: Three Cases. D. Rothschild, Boston.—p. 365.

Difficult Urination Associated with Intracranial Tumors of Posterior Fossa. E. Holman, Cleveland.—p. 371.

Encephalitis Periaxialis Diffusa.—Study of the case reported by Brock et al. throws light on the pathogenesis of the disease. It evidently began in the occipital lobes, although not at the extreme tip. The disease was bilateral and evidently spread forward by continuity. The peculiar "large globoid cells" observed in this disease resemble endothelial cells, and it is possible that they are associated with the proliferation of blood vessels that takes place in the affected regions.

Escape of Cerebrospinal Fluid Through Nose in Cases of Increased Intracranial Pressure.—In every one of the series of proved cases studied by Locke, spontaneous cerebrospinal rhinorrhea was associated with internal hydrocephalus and increased intracranial pressure. The most common lesion which produces a combination of these two factors is a cerebral neoplasm, but inflammatory or congenital obstruction of the cerebrospinal fluid also may be responsible. In this series the communication between the nose and the cerebrospinal fluid pathways occurred through the cribriform plate.

Bulbocapnine.—Bulbocapnine is one of eleven alkaloids from *Corydalis cava*. Bulbocapnine will cause a cessation of tremor in many cases of paralysis agitans. The treatment is palliative, but not curative. The experimental work done by Mella on animals seems to indicate that bulbocapnine may also be of value in the experimental study of catatonia.

Cerebrospinal Fluid Not Oxytocic.—Of twenty-eight cerebrospinal fluids obtained by Shapiro from twenty-five different patients, none caused an oxytocic effect on the virgin guinea-pig uterus. On the contrary, he observed a tendency of these fluids to inhibit contraction of the isolated uterus of the guinea-pig. He failed to obtain evidence to show that the intravenous injection of pituitary extract causes an increased secretion of the active principle present in the posterior lobe of the hypophysis into the cerebrospinal fluid within three minutes after the injection.

Toxemias in Early Stages of Mental Disease.—Evidence is presented by McIntyre et al. to show that manic-depressive, schizoid and confusional reactions may, in their early stages, be accompanied by signs of toxemia: leukocytosis, acidosis, fever and nitrogen retention. Treatment directed toward the elimination of the toxemia is frequently effective in bringing about a mental recovery. The toxins, acid or otherwise, so affect the hydrated colloids of the nerve cell as to bring about a cracking of the emulsion of which the nerve cell is composed. Treatment to be effective must take place before this irreversible cracking point is reached.

Spinal Fluid in Epilepsy.—An examination of fifty spinal fluids of epileptic patients, made by Patterson and Levi to determine whether such fluids exhibit any abnormalities, in the main was largely negative.

Xanthochromia in Epidemic Encephalitis.—Of thirty-two patients with epidemic encephalitis made the subject of study by Rothschild, three, or 9.38 per cent, showed xanthochromic spinal fluid.

Archives of Pathology and Laboratory Medicine, Chicago

1: 329-498 (March) 1926

*Biometric Studies in Pathology. IV. Statistical Characteristics of Population Composed of Necropsied Persons. R. Pearl and A. L. Bacon, Baltimore.—p. 329.
*Compensatory Hypertrophy and Hyperplasia of Islands of Langerhans in Pancreas of Child Born of Diabetic Mother. S. H. Gray and L. C. Feemster, St. Louis.—p. 348.
*Thrombopenic Purpura. L. F. Alrutz, J. L. Nortell and E. C. Piette, Oak Park, Ill.—p. 356.
Goundou in Monkey: Case. A. Massaglia, University, Miss.—p. 361.
*Four Unusual Malignant Tumors of Liver. L. W. Smith, Boston.—p. 365.
Recurrent Lipomatous Tumors of Groin. Liposarcoma and Lipoma Pseudomyxomatodes. R. H. Jaffé, Chicago.—p. 381.

Biometric Studies in Pathology.—A detailed account is presented by Pearl and Bacon of the biometric characteristics of the age, sex and racial distributions of persons included in 7,500 necropsy records. The data presented afford the requisite statistical basis for special biometric studies of particular pathologic conditions.

Increase in Insular Tissue of Pancreas in Child of Diabetic Mother.—A case is reported by Gray and Feemster in which the pancreas of a child born of a diabetic mother contained approximately twenty-four times as much insular tissue as the normal pancreas. The increase in maternal blood sugar is suggested as the stimulus which called forth the increase in insular tissue in the pancreas of the child. It is further suggested that hypoglycemia, the result of this insular hypertrophy and hyperplasia, may play a rôle in the sudden death of the baby. Associated with the hypertrophy of the islands of Langerhans was a hypertrophy of many medullary cells of the suprarenals.

Splenectomy for Thrombopenic Purpura.—The beneficial influence of splenectomy on extremely severe acute essential thrombopenia is shown by the case reported by Alrutz, Nortell and Piette. In about four and a half months the blood platelet count rose from 15,000 to 210,000. The erythrocyte count rose from 3 million to 4 million; the leukocyte count from 7,250 to 8,700. The differential count was within fairly normal limits.

Malignant Tumors of Liver.—Four unusual malignant tumors involving the liver are presented by Smith: (1) a primary hepatoma in a girl of 10; (2) a metastatic leiomyosarcoma in a woman of 50; (3) a primary melanoma of the liver in a woman of 68, and (4) a probable angiosarcoma in a woman of 36.

Archives of Physical Therapy, X-Ray, Radium, Omaha

7: 127-188 (March) 1926

Physiotherapy Abroad. D. Koback, Chicago.—p. 127.
Application of Radiology and Physiotherapy to Gynecology. I. Radium. F. B. Block, Philadelphia.—p. 137.
Pneumoperitoneum. II. Diagnosis. E. C. Sage, Omaha.—p. 140.
Roentgen-Ray Dosage. A. Bachem, Chicago.—p. 151.
Bronchial and Peribronchial Conditions Treated by Combined Diathermic and Galvanic Technic. J. U. Giesy, Salt Lake City.—p. 162.

Atlantic Medical Journal, Harrisburg, Pa.

29: 363-426 (March) 1926

Constitution and Disease. G. Draper, New York.—p. 363.
Prevention of Deformity. J. H. Galbraith, Altoona, Pa.—p. 366.
Treatment and Correction of Spinal Deformity. A. G. Davis, Erie, Pa.—p. 369.
Correction of Deformities of Lower Extremities. D. P. Willard, Philadelphia.—p. 373.
Treatment of Deformities of Upper Extremity. C. C. Yount, Pittsburgh.—p. 375.
Causes of Cancer of Skin. J. F. Schamberg, Philadelphia.—p. 377.
Diagnosis and Prognosis of Skin Malignancies. L. Hollander, Pittsburgh.—p. 379.
Treatment of Epithelioma of Skin. G. E. Pfahler, Philadelphia.—p. 381.
Complications Following Tonsillectomy. H. H. Lott, Philadelphia.—p. 387.

Canadian Medical Association Journal, Montreal

16: 221-347 (March) 1926

Diabetes and Insulin. F. G. Banting, Toronto.—p. 221.
Hospital: Its Long Crusade. W. W. Chipman, Montreal.—p. 233.
Involutionary Changes in Prostate and Female Breast in Relation to Cancer Development. H. Oertel, Montreal.—p. 237.
*Hypertonic Saline in Adynamic Ileus. J. W. Ross, Toronto.—p. 241.
*Pernicious Anemia. I. In Western Canada. E. W. Montgomery, Winnipeg.—p. 245.
*Id. II. Chloride Metabolism in Anemias, Especially Pernicious Anemia. M. G. Rioch and A. T. Cameron, Winnipeg.—p. 251.
Diagnosis and Treatment of Obstruction of Small Intestine in Adults. J. McKenty, Winnipeg.—p. 260.
*Arteriotomy for Embolus Obstructing Circulation in Extremity. J. G. MacDougall, Halifax, N. S.—p. 265.
Industrial Physician. W. I. Clark, Worcester, Mass.—p. 269.
Physician in Industry. W. L. T. Addison, Toronto.—p. 272.
Industrial Intoxication by Lead, Benzol and Nickel. N. Gwyn, Toronto.—p. 275.
Notification of Occupational Diseases. O. A. Cannon, Hamilton.—p. 278.
Handicapped Surgical Patient. I. Diabetic Patient. F. N. G. Starr and A. G. Fletcher, Toronto.—p. 281.
Id. II. Due to Cardiovascular Disease. F. H. Lahey and B. E. Hamilton, Boston.—p. 283.
Id. III. Due to Benign Hypertrophy of Prostate. W. Walters, Rochester, Minn.—p. 285.
Rabies. R. H. Malone, Montreal.—p. 288.
Toxemias of Pregnancy. W. K. Maclellan, Halifax.—p. 292.

Hypertonic Saline Injections in Adynamic Ileus.—Ross asserts that animal experiment and clinical proof justify the intravenous administration of hypertonic saline solution in this condition. Results may be expected where other known agents fail.

Researches on Pernicious Anemia.—Montgomery discusses the activities of the Medical Research Committee of the University of Manitoba in promoting the work being done under the "Gordon Bell Memorial," established in 1924, by the College of Physicians and Surgeons of Manitoba, in studying the etiology of pernicious anemia.

Chloride Metabolism in Pernicious Anemia.—Rioch and Cameron report on some of their work done in the study of sixteen cases of pernicious anemia in the active phase and ten cases in remission. None showed the presence of hydrochloric acid in the gastric secretion. Evidence is adduced *that in pernicious anemia not only is there complete gastric* achlorhydria, but further, that in some, if not all, cases, the chloride ion is absent from such gastric secretion as may occur. In six cases of pernicious anemia examined for peptic activity, three showed no activity, two very slight activity, and in one the activity was somewhat below normal. The dependence of the value of whole blood chloride on the *proportion of* cells to the plasma is emphasized. Determinations of whole blood chlorides are valueless for most clinical purposes. The plasma chloride content is relatively constant in the anemias. In the active stage of pernicious anemia, especially when the hemolytic changes precede nervous symptoms, there is a slight but undoubted lowering of cell chlorides. In the remissive stage of pernicious anemia, and in the other anemias studied, the average figure for cell chlorides does not markedly differ from the normal, but the extremes show wider variations. There is in the active stage of pernicious anemia a marked upset in chloride metabolism, characterized by lowering of the blood cell chlorides, and in some, if not all, cases, by the absence of the chloride ion (as well as hydrochloric acid) from any gastric secretion that occurs. The former abnormality may disappear in the remission stage.

Arteriotomy for Obstruction by Embolus.—Under local anesthesia, MacDougall removed an embolus about seven-eighths inch (2.2 mm.) long and weighing 27 grains (1.8 Gm.) from the common femoral artery of a man, aged 65. The embolus was lodged at the bifurcation of the common femoral and for three-fourths inch (19 mm.) above it. The result was a perfect one in every way.

Colorado Medicine, Denver

23: *75-108 (March) 1926*

Bronchoscopy as Aid in Diagnosis and Treatment of Suppurative Diseases of Lung. R. M. Lukens, Philadelphia.—p. 78.
Needs of Blind and New Colorado Law. E. Jackson, Denver.—p. 84.
Empyema in Children. G. B. Packard, Denver.—p. 88.

Gallbladder Visualization by Administration of Radio-Opaque Substances. N. B. Newcomer, E. Newcomer and C. A. Conyers, Denver.—p. 94.
Psychopathology-Anxiety. L. H. Ziegler, Denver.—p. 102.

Endocrinology, Los Angeles

10: 1-104 (Jan.-Feb.) 1926

*Progressive Lipodystrophy and Hyperthyroidism. G. Marañon and J. B. Soler, Madrid.—p. 1.
Gigantism: Case. N. A. Schereschewsky, Moscow.—p. 17.
*Relation Between Age at Initiation of and Response of Body Growth to Thyroid and Parathyroid Deficiency. XXX. F. S. Hammett, Philadelphia.—p. 29.
*Estrous Cycle in Rat. II. Effect of Thyroparathyroidectomy and Parathyroidectomy. M. O. Lee, Columbus, Ohio.—p. 43.
Vigor. VII. Fatigability of Castrated Rats. M. Gans and R. G. Hoskins, Columbus, Ohio.—p. 56.

Lipodystrophy and Hyperthyroidism.—Progressive lipodystrophy, cephalothoracic lipodystrophy, or syndrome of Barraquer-Simons (syndrome rather than a disease), appears to be a predisposition to a peculiar way of losing flesh, determined by neurovegetative factors whose nature is not known. There are cases, chiefly in women, in which this alteration is what might be called a physiologic or attenuated form. If in such predisposed cases there is an additional cause for losing weight, such cause will act as an "activator" which will accentuate the typical form of loss of flesh. Among these, in the opinion of Marañon and Soler, the most frequent is hyperthyroidism, undoubtedly because it coincides with favorable neurovegetative perturbations which determine the lipodystrophic predisposition. Cephalothoracic lipodystrophy frequently coincides with hyperthyroidism, and in every case of lipodystrophy the minor hyperthyroid symptoms should be sought and the basal metabolism be determined; also in every case of adiposis. In the lower parts the fat is normal, or at least offers a greater resistance to the loss, especially if lipomatotic formations are produced, as is frequently the case.

Thyroid, Parathyroid and Growth.—Hammett presents data bearing on the salient sex and systemic similarities and differences in growth response to thyroid and parathyroid deficiency initiated at different stages of development in the life of the albino rat, so far as growth in body weight, body length and tail length is concerned.

Thyroid, Parathyroid and Estrus.—Data presented by Lee seem to show that the effects of thyroidectomy and of parathyroidectomy on the estrual cycles seem to be additive when both operations are performed on the same animal.

Florida State Medical Association, Jacksonville

12: 223-249 (March) 1926

Treatment of Colds. M. A. Lischkoff, Pensacola.—p. 223.
Treatment of Urethral Calculus. E. S. Gilmer, Tampa.—p. 225.
Physician and Health Officer. F. A. Brink, Jacksonville.—p. 228.
Laboratory as Aid in Diagnosis. W. C. Jones, Miami.—p. 229.
Stricture of Esophagus Due to Lye Burns. J. Halton, Sarasota.—p. 234.

Georgia Medical Association Journal, Atlanta

15: 39-81 (Feb.) 1926

One Hundred Cases of Goiter. C. E. Waits and R. S. Leadingham, Atlanta.—p. 39.
Management of Head Injuries. J. C. Weaver, Atlanta.—p. 43.
Diagnostic Importance of Pyelogram in Chronic Abdominal Conditions. S. J. Sinkoe, Atlanta.—p. 48.
Dermatophytosis. J. W. Jones, Atlanta.—p. 52.
Treatment of Diabetes Mellitus. J. A. Redfearn, Albany.—p. 55.
General Anesthesia. C. A. Dexter, Columbus.—p. 60.

Illinois Medical Journal, Oak Park

49: 177-264 (March) 1926

Massage and Movements*in Treatment of Fractures. W. Darrach, New York.—p. 199.
Secretaries' Conference in 1926. J. Swanberg, Quincy.—p. 202.
Biologic Sense of Beauty. E. C. Piette, Chicago.—p. 204.
Value of Nurse in School Medical Inspection. M. D. Reiseman, Chicago. —p. 205.
Meinicke Test for Syphilis by Precipitation. W. T. Mefford, Chicago.—p. 210.
Drugs We Use. W. R. Mangum, Bridgeport.—p. 211.
Diseases Simulating Pulmonary Tuberculosis. M. Lewison, Chicago.—p. 213.
Surgical Intervention in Medical Kidney Diseases. G. Kolischer and A. E. Jones, Chicago.—p. 215.
Bone Cysts: Cases. J. Ireland, Chicago.—p. 217.
Operative Treatment of Fractures. T. A. Johnson, Rockford.—p. 220.
Arteriosclerosis. B. Lemchen, Chicago.—p. 224.
Quack Curse—And Cure. H. R. Krasnow, Chicago.—p. 226.
Paralysis of Lower Extremity: Gluteal Paralysis. P. H. Kreuscher, Chicago.—p. 229.
Routine Examinations of Back and Cervical Spine. P. Lewin, Chicago. —p. 231.
Some Diagnoses of Disorders of Alimentary Tract. E. L. Heintz and R. G. Johnson, Chicago.—p. 231.
Medical Legislation. J. R. Neal, Springfield.—p. 234.
Foreign Bodies in Air and Food Passages not Casting Roentgen-Ray Shadows. E. L. Myers, St. Louis.—p. 243.
Daily Hospital Clinic for Private Patients. E. Keating, Chicago.—p. 246.
Closed Hospital. J. J. Pelock, Chicago.—p. 249.
Aural Auscultation. S. Rosenblatt, Chicago.—p. 258.

Iowa State Medical Society Journal, Des Moines

16: 101-152 (March) 1926

Diagnosis of Brain Tumor. W. E. Dandy, Baltimore.—p. 101.
Thyroid: Medical Considerations. E. G. Senty, Davenport.—p. 103.
Id. Surgical Considerations. C. J. Rowan, Iowa City.—p. 107.
Id. Radiation Considerations. T. A. Burcham, Des Moines.—p. 110.
Mendelian Law. W. W. Bowen, Fort Dodge.—p. 117.
Major Walter Reed and Yellow Fever. D. S. Fairchild, Clinton.—p. 129.

Johns Hopkins Hospital Bulletin, Baltimore

38: 163-253 (March) 1926

Relation of Sympathetic Nervous System to Skeletal Muscle Tonus. F. D. Coman, Baltimore.—p. 163.
*Chloroma. D. Brannan, Pittsburgh.—p. 189.
*Interagglutination of Maternal and Fetal Blood in Late Toxemias of Pregnancy. W. M. Allen, Baltimore.—p. 217.
*Basal Metabolism in Toxemias of Pregnancy. H. J. Stander and C. H. Peckham, Baltimore.—p. 227.
Fetal Synthesis of Fats. L. G. Wesson, Baltimore.—p. 237.
*Prophylactic and Therapeutic Activity of Sodium Salt of Acetyl Oxyaminophenylarsine Acid (Stovarsol) in Experimental Syphilis of Rabbits. A. K. Poole, Baltimore.—p. 242.

Chloroma.—Seventy-three cases recorded in the literature are analyzed by Brannan and one personal case is reported. This case in most respects was typical of chloroleukemia. The patient was a young man suffering from myelogenous leukemia with gradually developing and characteristic, hard, flat cranial tumors, exophthalmos with marked visual and fundus changes, facial paralysis, impairment of hearing and symptoms confused with mastoiditis and otitis media. There was marked roentgenologic evidence of intracranial pressure and orbital and sinus growths. The leukocyte counts, which ranged from 12,000 to 39,900, were relatively low for leukemia but rather typical of chloroleukemia. The leukocytes at first were largely metamyelocytes but later mostly myeloblasts. Marked secondary anemia, with evidence of regeneration of the erythrocytes, was a characteristic feature. A very detailed postmortem examination was made.

Interagglutination of Maternal and Fetal Blood.—The isoagglutination characteristics of the bloods of 375 normal and of 104 toxemic women and their newly born infants have been studied by Allen. There was no evidence that incompatibility is more frequent in toxemic than in normal gestation. Incompatibility between the bloods of mother and infant was present in 20.8 per cent of 375 normal and 21.1 per cent of 104 toxemic pregnancies. There was no evidence of an increased titer in the maternal serum of toxemic women, nor of specific immunization of the mother against fetal corpuscles. This series of cases gives no evidence that the late toxemias of pregnancy have their origin in iso-agglutination phenomena.

Basal Metabolism in Toxemias of Pregnancy.—Stander and Peckham failed to find basal metabolism determinations of any real help in differentiating between the various types of toxemias in late pregnancy. In normal pregnancy, as well as in the different toxemias of pregnancy, there is some factor or factors, which result in an elevated basal metabolic rate as term is approached, a gradual return to normal ensuing during the puerperium. It is probable that such a factor, or factors, may have to do with the growing product of conception, as well as a slight increased activity of the thyroid gland.

Stovarsol in Experimental Syphilis.—The sodium salt of acetyl oxyaminophenylarsine acid, given by mouth in a single dose of 0.5 Gm. per kilogram, Poole says, appears to exert a definite prophylactic action in experimental syphilis of the rabbit. In the same dosage, it apparently can bring about the healing of the initial syphilitic orchitis. The drug is toxic for rabbits in single doses as low as 0.2 Gm. per kilogram, when administered by mouth, causing death of the animal within twenty-seven days or less. Further experimental study of the drug is advised by Poole before it is employed in human syphilis.

Journal of Biological Chemistry, Baltimore

47: 351-545 (Feb.) 1926

Preparation of *d*-Arginine Carbonate. A. E. Pratt, Ann Arbor, Mich.—p. 351.

Determination of Sugar in Blood and in Normal Urine. O. Folin, Boston.—p. 357.

Dietary Factors Influencing Calcium Assimilation. VII. Influence of Sunlight on Calcium Equilibrium in Milking Cows. E. B. Hart, H. Steenbock, C. A. Elvehjem, C. A. Scott and G. C. Humphrey, Madison, Wis.—p. 371.

Fate of Acid in Body. C. H. Fiske, R. A. Goodell, L. E. Hathaway, Jr., and E. J. West, Boston.—p. 385.

*Clinical Calorimetry. XL. Effect of Absence of Sweat Glands on Elimination of Water from Skin and Lungs. H. B. Richardson, New York.—p. 397.

Antirachitic Value of Irradiated Cholesterol and Phytosterol. V. Chemical and Biologic Changes. A. F. Hess, M. Weinstock and E. Sherman, New York.—p. 413.

New Method for Identification and Estimation of Cholesterol and Certain Other Compounds. J. V. Steinle and L. Kahlenberg, Madison, Wis.—p. 425.

Comparative Metabolism of Certain Aromatic Acids. VIII. Acetylation of Amino Compounds. J. B. Muenzen, L. R. Cerecedo and C. P. Sherwin, New York.—p. 469.

Benzoic Acid Conjugation in Dog with Direct Quantitative Method for Hippuric Acid. A. J. Quick, Philadelphia.—p. 477.

Basal Metabolism of Girls. K. Blunt, J. Tilt, L. McLaughlin and K. B. Gunn, Chicago.—p. 491.

Effect of Sleep on Urinary Chlorides and *p*H. G. E. Simpson, Montreal.—p. 505.

Iron Content of Meats. E. B. Forbes and R. W. Swift, State College, Penn.—p. 517.

Studies on Synthesis and Elimination of Certain Bile Components in Obstructive Jaundice. J. L. Brakefield and C. L. A. Schmidt, Berkeley, Calif.—p. 523.

Function of Sweat Glands.—An individual in whom the absence of sweat glands had been demonstrated by microscopic examination was studied by Richardson with reference to the elimination of heat and water vapor. The study of this patient confirms the theory that the sweat glands constitute an emergency apparatus which is called on only under exceptional conditions.

Journal of Industrial Hygiene, Boston

8: 89-142 (March) 1926

*Treatment of Accidental Wounds. R. J. DeMotte, Chicago.—p. 89.

Researches in Mental Hygiene in Industry. IV. Psychiatric Case Studies in Department Store and Factory. H. B. Elkind, Boston.—p. 94.

Health Hazards in Rubber Industry. R. S. Quinby, Watertown, Mass.—p. 103.

Lead Poisoning Among Oxyacetylene Welders in Scrapping of Naval Vessels. E. W. Brown, Edgewood, Md.—p. 113.

Treatment of Accidental Wounds.—The treatment advocated by DeMotte consists in assisting nature to heal, and refraining from the use of antiseptics, as they really have little value in these cases. Nature prevents infection mechanically by hemorrhage, chemically by antisepsis, and biologically by phagocytosis. Blood washes out the wound, carrying away a certain amount of foreign matter, including bacteria. The blood contains certain antibodies which act as chemical antiseptics and kill bacteria, and leukocytes which engulf and digest them. Nature repairs a wound by bathing the injured tissues with serum which contains cell food, and leukocytes which digest and absorb badly damaged tissue. On this basis the treatment employed is as follows: (1) Thorough cleansing of the surrounding skin; (2) trimming away of overhanging, ragged skin margins; (3) gentle, but thorough sponging out of the wound, removing blood clots and foreign matter; (4) trimming away of all badly damaged tissue in the depth of the wound. This opens all capillaries and tissue spaces for the flow of serum. (5) Drainage strip, if needed; (6) closure with judgment by adhesive strips or sutures; (7) moist dressings, if needed; (8) continuous moist heat in the more extensive wounds. If wounds are handled in this manner, Nature will disinfect them in forty-eight hours and healing will occur with a minimum of scar tissue.

Journal of Laboratory and Clinical Medicine, St. Louis

11: 503-599 (March) 1926

*Methods of Staining Tubercle Bacilli. H. J. Corper, Denver.—p. 503.

*Reactions of Typhoid Vaccination. H. J. Nichols and P. Hitchens, Washington, D. C.—p. 517.

Blood Counts in Mississippi. L. S. Lippincott, Vicksburg, Miss.—p. 524.

Chemical Investigations on Neo-Arsphenamine. I. Methods of Analysis. L. Freedman, Brooklyn, N. Y.—p. 528.

*Influence of Magnesium Sulphate on Expulsion of Bile from Gallbladder. W. H. Ganit, Baltimore and G. v. Volborth, Petrograd.—p. 542.

*Variations in Blood Sugar Content Following Administration of Insulin. H. J. John, Cleveland.—p. 548.

*Problem in Insulin Therapy. W. J. Mallory and J. D. Roe, Washington, D. C.—p. 560.

Blood Gas Analyzer. C. C. Guthrie, Pittsburgh.—p. 565.

Basic Fuchsin for Endo Mediums. R. W. French, Washington, D. C.—p. 571.

New Hemoglobin Scale. C. E. Roderick, Battle Creek, Mich.—p. 573.

Aniline as Decolorizing Agent in Gram Stain. H. A. Kemp and M. S. Fleisher, St. Louis—p. 575.

Paraffin Rings on Microscopic Slides. G. Green, Cambridge, Ohio.—p. 577.

Destruction by Heating of Complement in Human Serum. R. A. Kilduffe, Atlantic City, N. J.—p. 578.

Gassing Chamber for Short Exposures. D. C. Walton and C. A. Jones, Edgewood, Md.—p. 580.

Staining Tubercle Bacilli.—An examination made by Corper of twenty sputums containing tubercle bacilli by thirteen different methods revealed that when the technic is properly performed the majority of these methods may result in staining the tubercle bacilli in the sputums with equal efficiency. There was, however, a decided difference in the ease of performance, speed and simplicity of the various individual methods. Sixteen different positive smears consecutively stained and restained (after destaining) by nine different methods emphasized further the importance of technic in the staining of tubercle bacilli. For practical purposes the simple, steaming, carbolfuchsin (Ziehl-Neelsen) method, or one of its modifications, is recommended. The choice of colors remains with the individual operator, since any number of dye combinations can be used for staining and counterstaining the tubercle bacilli. A negative finding by the method requires for further elaboration animal (guinea-pig) inoculation. In view of the danger of technical errors and in order to raise the present efficiency of the technic, especially with otherwise negative findings or when only single specimens are available, it is recommended that each specimen tested for tubercle bacilli by staining methods be controlled by the coincident staining of a like preparation to which a standard suspension of tubercle bacilli, which can easily be kept available in the laboratory at all times, has been added.

Reactions of Typhoid Vaccination.—Nichols and Hitchens assert that recent advances in dealing with antitoxic immunity as seen in diphtheria and scarlet fever have not been duplicated in regard to bacterial immunity as seen in typhoid fever. It is not possible at present to detect susceptibles and immunes to typhoid by skin or other tests.

Influence of Magnesium Sulphate on Bile Expulsion.—Ganit and Volborth found absolutely no influence of magnesium sulphate on the expulsion of bile into the duodenum.

Variations in Blood Sugar Caused by Insulin.—John asserts that the amount of insulin administered intravenously appears to bear no regular relation to the fall of blood sugar. While the administration of insulin usually produces a decrease in the blood sugar, in some instances it is followed by an increase which may or may not be related to postprandial hyperglycemia. In general, whatever the primary effect of insulin, repeated doses result in a decrease in the blood sugar; this apparently cumulative effect, however, is independent of the size of the doses. The level of blood sugar per se is not a criterion of the probability that a reaction will follow the administration of insulin. Thus, a large dose of insulin may be given in the presence of hypoglycemia without any resultant reaction; and, in another case, a reaction may occur in the presence of a marked hyperglycemia.

Problems in Insulin Therapy.—Mallory and Roe insist that in a patient apparently not responding to increasing doses of insulin by a proportionate decrease in sugar excretion and reduction of the blood sugar level, the time relation of sugar excretion to insulin dosage should be investigated. The simplest method is the examination of three-hour portions of urine. Frequent blood sugar determinations give additional information. The remedy is the redistribution of insulin in amount and at the time when required.

Journal of Medical Association of Georgia, Atlanta

15: 81-124 (March) 1926

Adhesive Mediastino-Pericarditis. E. E. Murphy, Augusta.—p. 81.
Treatment of Pneumonia. E. C. Thrash, Atlanta.—p. 86.
Dextrose Content of Cerebrospinal Fluid in Certain Nervous and Mental Diseases. E. B. Saye, Milledgeville.—p. 92.

Kansas Medical Society Journal, Topeka

26: 71-104 (March) 1926

Malignant Cystic Ovarian Tumors. J. L. Grove, Newton.—p. 71.
Radiographic Diagnosis of Early Pulmonary Tuberculosis. R. G. Breuer, Norton.—p. 75.
Evolution of Science. S. G. Stephenson, Topeka.—p. 82.
Relation of Clinician to Laboratory. A. S. Welch, Kansas City, Mo.—p. 85.

Kentucky Medical Journal, Bowling Green

25: 117-160 (March) 1926

Ulcer of Cornea. M. C. Baker, Louisville.—p. 121.
Temporosphenoidal Abscess: Case. H. G. Reynolds and J. D. Abell, Paducah.—p. 124.
Local Anesthesia in Eye, Ear, Nose and Throat Surgery. J. J. Wynn, Louisville.—p. 127.
Delirium Following Cataract Operations. F. C. Thomas, Lexington.—p. 134.
Empyema of Frontal Sinus: Case. D. M. Griffith, Owensboro.—p. 143.
General Anesthesia in Eye, Ear, Nose and Throat Surgery. W. H. Long, Louisville.—p. 146.
Surgical Treatment of Peptic Ulcer. F. W. Rankin, Lexington.—p. 152.
Cervical Carcinoma in Patient Twenty-Six. L. W. Frank, Louisville.—p. 156.

Medical Journal and Record, New York

123: 345-412 (March 17) 1926

ancer: Causes and Control. J. Young, Edinburgh.—p. 345.
outh Infections. J. L. T. Appleton, Philadelphia.—p. 351.
heritance and Medicolegal Application of Blood Group. J. A. Buchanan, Brooklyn.—p. 354.
nuresis. M. K. Wylder, Albuquerque, N. M.—p. 358.
iminishing Number of Doctors in Rural Districts. C. L. Larkin, Waterbury, Conn.—p. 360.
pidemiology of Scarlet Fever. D. M. Lewis, New Haven, Conn.—p. 361.
reatment of Constricture at Neck of Bladder. M. B. Saunders, Waco, Texas.—p. 364.
xtravasation of Urine. F. Greenburg, New York.—p. 366.
reatment of Hypertonus and Arteriosclerosis. S E. Witt, New York.—p. 369.
tiology of Eczema. F. C. Combes, Jr., New York.—p. 371.
ndogenic Nature of Some Skin Diseases. G. Singer, Vienna.—p. 374.
esponse of Skin to Systemic Affections. S. Gordon, Philadelphia.—p. 375.
richophytosis of Glabrous Skin. M. Scholtz, Los Angeles.—p. 379.
Dermatomyositis. E. D. Friedman, New York.—p. 382.

Medicine, Baltimore

5: 1-78 (Feb.) 1926

Parathyroid Glands. J. B. Collip, Edmonton, Canada.—p. 1.
Present Knowledge of Filtrable Viruses. W. G. MacCallum, Baltimore.—p. 59.

Michigan State Medical Society Journal, Grand Rapids

25: 114-170 (March) 1926

Intravenous Therapy in Acute Infections and Infectious Diseases. H. H. Young, Baltimore.—p. 114.
Pneumonia: Prophylaxis and Therapeutics. F. T. Lord, Boston.—p. 120.
Contact of Surgeon with Problem of Cancer. G. W. Crile, Cleveland.—p. 124.
Problem of Malignant Disease as Met by Internist. S. Strouse, Chicago.—p. 128.
Primary and Metastatic Cancer of Head. H. L. Pollack, Chicago.—p. 131.
Radiation Therapy in Cancer. H. P. Doub, Detroit.—p. 134.
Postoperative Pulmonary Complications. E. D. Rothman, Detroit.—p. 140.
Case of Masochism. W. F. Martin, Battle Creek.—p. 146.

Minnesota Medicine, St. Paul

9: 105-150 (March) 1926

Intestinal Tuberculosis. F. L. Jennings and E. Fenger, Oak Terrace.—p. 105.
Indications for Artificial Pneumothorax. R. M. Mattill and M. H. Wall, Oak Terrace.—p. 108.
Differential Diagnosis of Pulmonary Tuberculosis. H. S. Boquist, Oak Terrace.—p. 110.
Heliotherapy in Tuberculosis. J. H. Bendes, Oak Terrace.—p. 112.
*Pleurisy. D. R. Hastings, Oak Terrace.—p. 114.
Glen Lake Sanatorium. E. S. Mariette, Oak Terrace.—p. 116.
*Flocculation in Tuberculosis. W. L. Hardesty, Oak Terrace.—p. 119.
*Diet in Treatment and Prevention of Tuberculosis. J. A. Myers, Minneapolis.—p. 121.
Tonsillectomy in Tuberculosis. H. Newhart, Minneapolis.—p. 124.
*Thoracoplasty in Tuberculosis. A. A. Law, Minneapolis.—p. 126.
Prognosis of Tuberculosis in Infancy and Childhood. F. W. Schlutz, Minneapolis.—p. 127.
Tuberculosis and Pregnancy. J. C. Litzenberg, Minneapolis.—p. 129.
Tuberculosis of Oral Cavity. C. W. Waldron, Minneapolis.—p. 131.

Pleurisy and Tuberculosis.—Of 1,182 patients with tuberculosis, whose histories were reviewed by Hastings, fibrinous pleurisy and pleurisy with effusion occurred in 55.7 per cent. Hastings feels that this means that fibrinous pleurisy may be the first symptom of pulmonary tuberculosis; hence, patients with fibrinous pleurisy should be warned that they may have tuberculosis.

Flocculation in Tuberculosis.—Hardesty prefers the Baum technic. He has carried out the reaction in 300 cases, comprising patients and employees of a sanatorium, and guinea-pigs, healthy and diseased. Strongly positive reactions have occurred only in tuberculosis. The intensity of the reaction is roughly proportional to the extent and activity of the process. Weak positives are occasionally found in those with mild tuberculous infection and in individuals presumably healthy. Negative reactions occurred only once in active tuberculosis. Thus, it would seem that one great value of the reaction consists in its power to differentiate between active tuberculosis in which the bacilli are not found, and other diseases which clinically simulate it.

Diet in Tuberculosis.—Myers urges that the diet of the tuberculous patient must be prescribed by the physician, just as drugs are prescribed in certain other diseases. He objects to forced feeding and stresses the importance of meeting the vitamin requirement of the body.

Thoracoplasty in Tuberculosis.—Law has done fifty-eight operations on thirty-one patients and has lost only one directly from the operation. This was a one-stage operation, and the man died of shock. In all cases he has used local nerve block with procaine supplemented by nitrous oxide gas and oxygen analgesia.

Nebraska State Medical Journal, Norfolk

11: 89-128 (March) 1926

Practical Management of Some Types of Acute Intestinal Obstruction. J. E. Summers, Omaha.—p. 89.
Urgent Surgery of Abdomen. J. W. Duncan, Omaha.—p. 93.
Leverage and Levers in Reduction of Fractures. J. E. M. Thomson, Lincoln —p. 98.
Modern Aspects of Nutrition: Pathology of Malnutrition. V. E. Levine, Omaha.—p. 100.
Application of Business Principles to Practice of Medicine. C. C. Johnson, Lincoln.—p. 109.
Chronic Nonsuppurative Arthritis. M. J. Breuer, Lincoln.—p. 112.
What People Think of Us and Why. G. O. Remy, Ainsworth.—p. 115.

New Jersey State Medical Society Journal, Orange

23: 109-154 (March) 1926

Scarlet Fever: Prevention and Cure. A. Zingher, New York.—p. 100.
Angina Pectoris. G. M. Piersol, Philadelphia.—p. 117.
Calculus of Kidney and Ureter: Thirty-Four Cases. L. R. Kaufman.—p. 124.
Diabetes Mellitus in Infancy: Case. G. Ginsberg.—p. 129.

New Orleans Medical and Surgical Journal

78: 557-650 (March) 1926

Milk Injections for Pelvic Infections in Women. G. Gellhorn, St. Louis.—p. 557.
Conservative Treatment of Puerperal Infection. C. J. Miller, New Orleans.—p. 565.
Doctor's Responsibility to Motherhood. R. M. Adams, Tupelo, Miss.—p. 569.
Indications for Intraspinal Treatment of Syphilis. C. S. Holbrook, New Orleans.—p. 574.
Syphilis and Surgical Conditions. A. G. Payne, Greenville, Miss.—p. 582.
Traumatic and Simultaneous Dislocation of Shoulder Joints. A. P. Heineck, Chicago.—p. 586.
Tuberculosis in General Hospital. I. L. Robbins, New Orleans.—p. 594.
Important Relationship of Postmortem Examinations to Clinical Medicine. A. B. Friedrichs, New Orleans.—p. 604.
Sacral and Parasacral Anesthesia. E. H. Galloway, Jackson, Miss.—p. 608.
Splenectomy in Certain Types of Anemia. A. Street, Vicksburg, Miss.—p. 611.
Acute Rhinitis and Pharyngitis. J. S. Ullman, Natchez, Miss.—p. 614.
Treatment of Failing Heart. T. D. Bourdeaux, Meridian, Miss.—p. 620.

New York State Journal of Medicine, New York

26: 225-922 (March 15) 1926

*Lymphatic Drainage. W. A. Costain, Toronto.—p. 225.
Polycystic Disease of Kidneys: Six Cases. J. Schwartz, New York.—p. 231.

Shortened Hospitalization for Diabetic Patients. H. N. Cooper, Watertown.—p. 237.
*Botulism: Case. A. G. Foord and A. E. Forsyth, Buffalo.—p. 239.
Intimations of Public Health in Early New York. D. B. Armstrong, New York.—p. 241.
*Treatment of Laryngeal Tuberculosis. R. S. Moore, Syracuse.—p. 247.

Lymphatic Drainage.—The operation of draining the thoracic duct in the neck is a surgical procedure which is designed to overcome the septic absorption which occurs in diffuse peritonitis. The operation is described in detail by Costain, and sixteen cases are reported. The mortality rate of these cases has been reduced from 30 to 40 per cent.

Botulism.—A case of botulism, fatal in five days, due to eating home canned string beans, is presented by Foord and Forsyth. *Bacillus botulinus*, type B, was recovered in pure culture from the spoiled beans, and from the intestinal content of the patient at necropsy. Toxin production by the organism was vigorous. Chickens were immune to enormous doses of the same, whereas guinea-pigs and rabbits were highly susceptible. Heating the toxin in boiling water for five minutes destroyed it completely. Pathologic findings were characteristic of botulism in the patient as well as in the animals.

Laryngeal Tuberculosis.—Moore pleads for a more systematic study of the larynx in all cases of tuberculosis, followed by an examination at least once each month.

Oklahoma State Medical Association Journal, Muskogee

19: 59-82 (March) 1926

Oklahoma Flora: Hay-Fever. R. M. Balyeat, Oklahoma City.—p. 59.
Injuries to Small Bones of Hand and Wrist. F. Y. Cronk, Tulsa.—p. 64.
Wrist Joint Injuries. E. McBride, Oklahoma City.—p. 67.
Rectal Analgesia Combined with Ethylene Oxygen in Obstetrics. C. E. White, Muskogee.—p. 70.
Correlation of Surgery and Radiotherapy. M. M. Roland, Oklahoma City.—p. 71.

Philippine Journal of Science, Manila

29: 1-304 (Jan.-Feb.) 1926

Dengue. J. F. Siler, M. W. Hall and A. P. Hitchens.—p. 1.

Public Health Journal, Toronto

17: 101-150 (March) 1926

Immunization Against Scarlet Fever. R. George.—p. 101.
Venereal Diseases. J. E. Campbell.—p. 106.
*New Haven Demonstration of Community Control of Rickets. M. M. Eliot.—p. 114.
Hieronymus Fracastorius de Contagionibus, Morbisque Contagiosis et Eorum Curatione, Libri Tres. W. R. Riddell.—p. 117.
Social Hygiene and Health Officer. D. V. Currey, St. Catherines.—p. 125.
Annual Rest Periods. B. Merson.—p. 127.
Relation of Social Settlement to Community Life. G. T. Fergusson.—p. 129.

Community Control of Rickets.—The New Haven demonstration was undertaken to show that 90 per cent of the babies seen showed the evidences of slight rickets by roentgen-ray examination before they were 6 months of age. When the directions regarding cod liver oil and sunbaths were followed regularly, these babies did not develop the slightest evidence of rickets; that is, the disease was controlled. In contrast to this group stand the control series which showed 18 per cent of moderate or marked rickets at 10 months, 25 per cent at 13 months, and 37 per cent at 25 months of age. In the temperate zone, rickets is a nearly universal disease among infants, whether breast fed or artificially fed. If prevention is to be brought about, Eliot says, antirachitic treatment should be begun in the first month of life and continued faithfully throughout two years.

Physical Therapeutics, Baltimore

44: 67-130 (Feb.) 1926

Fractional High Voltage Roentgen-Ray Radiation Technic in Inoperable Malignant Lesions. W. L. Clark, Philadelphia.—p. 67.
Dangers of Roentgen Ray. S. Tousey, New York.—p. 77.
Physical Measures for Joint Diseases. J. W. Travell, New York.—p. 87.
Diagnosis and Physical Therapy in Painful Shoulder Conditions. R. Kovacs, New York.—p. 90.

South Carolina Medical Journal, Greenville

22: 51-78 (March) 1926

Transfusion of Blood. J. McLeod, Florence.—p. 57.
Intussusception in Children and Operation to Replace Resection in Late Cases. G. H. Bunch, Columbia.—p. 61.
Five Thousand Nonsurgical Drainages of Biliary Tract. G. M. Niles, Atlanta, Ga.—p. 64.
Intracranial Hemorrhage of New-Born. W. E. Simpson, Rock Hill.—p. 65.
Splenomegaly. S. O. Black, Spartanburg.—p. 69.
Mental Hygiene of Childhood. R. G. Beachley, Spartanburg.—p. 70.

Surgery, Gynecology and Obstetrics, Chicago

42: 305-444 (March) 1926

Suppurative Diseases of Lung Due to Inspirated Foreign Body Contrasted with Those of Other Etiology. C. Jackson, Philadelphia.—p. 305.
*Mortality in Important Surgical Diseases, Especially Appendicitis. A. M. Willis, Richmond, Va.—p. 318.
*Intrahepatic Cholelithiasis. E. S. Judd and V. G. Burden, Rochester, Minn.—p. 322.
*New Method of Demonstrating Median Nerve Lesions. D. Crile, Chicago.—p. 325.
*Splenectomy as Therapeutic Measure in Thrombocytopenic Purpura Hemorrhagica. A. O. Whipple, New York.—p. 329.
*Nephritis in Pregnancy. R. Rockwood, R. D. Mussey and N. M. Keith, Rochester, Minn.—p. 342.
Volvulus of Cecum: Case Complicating Typhoid. H. F. Graham, Brooklyn.—p. 351.
*Cancer of Umbilicus Secondary to Cancer of Cecum. J. R. Head, Madison, Wis.—p. 356.
Chondrodysplasia. W. H. Cole, St. Paul.—p. 359.
*Varix of Superficial Epigastric Vein Simulating Femoral Hernia. W. Hughson, Baltimore.—p. 366.
Surgical Management of Acute Abdomen. W. M. Thompson, Chicago.—p. 368.
*Nonspecific Antigenic Effect of Spermatozoa on Fertility. S. J. Fogelson, Chicago.—p. 374.
*Acute Hemorrhagic Pancreatitis. E. Butler and C. D. Delprat, San Francisco.—p. 379.
Registry of Bone Sarcoma. E. A. Codman, Boston.—p. 381.
*Staphylococcus Meningitis Secondary to Congenital Sacral Sinus. T. S. Moise, New Haven.—p. 394.
*Hernia in Broad Ligament. L. Dunn, Minneapolis.—p. 398.
*Method of Partial Gastrectomy with Telescopic Anastomosis. W. W. Babcock, Philadelphia.—p. 403.
Kineplastic Amputations: Arm-Bimotor and Prosthesis. G. B. Arana, Buenos Aires.—p. 416.
Subastragaloid Arthrodesis in Treatment of Old Fractures of Calcaneus. R. S. Reich, Cleveland.—p. 420.
Operation for Incontinence of Urine Following Perineal Prostatectomy. E. L. Keyes, New York.—p. 423.
Technic for Roentgen-Ray Diagnosis of Clavicle Fractures. F. Quesada, Lima, Peru.—p. 424.
*Anastomosis of Veins. C. E. Bird, New Haven, Conn.—p. 428.

Surgical Disease Mortality.—Data obtained by Willis from the Bureau of Vital Statistics show that the number of deaths per hundred thousand from gallstones increased 77 per cent since 1901; the mortality rate from gastro-intestinal ulcer has increased 72 per cent; that from appendicitis almost 31 per cent, while the mortality rate accompanying thyroid disease increased more than 250 per cent. Willis believes that standardization of the methods of treatment of these diseases will effect a material reduction of these mortality rates.

Intrahepatic Cholelithiasis.—The unique features in the case reported by Judd and Burden are: The finding of many large intrahepatic calculi in a liver that was grossly normal, more than eleven years after cholecystectomy, and removal of numerous stones from the extrahepatic ducts; and the presence of this condition without the occurrence of jaundice or any clinical evidence of hepatic insufficiency, the condition being an incidental finding in a patient who died from intestinal obstruction.

Demonstration of Median Nerve Lesions.—The sign described by Crile presents the means of delineating in a graphic manner cutaneous areas, the nerve supply of which is blocked. It was first noted in a case of malunion of a fracture of the lower end of the radius and ulna with complete sensory paralysis of the median nerve area in the hand. As part of the treatment, Bier's hyperemia was employed. The patient noticed that after the hyperemia had been established for two or three minutes, the hand assumed a peculiar appearance. The thumb and first two fingers and the radial side of the ring finger gradually became cyanosed and tense, the color extending over the thenar eminence and outlining the sensory distribution of the median nerve. The rest of the ring finger and the little finger and the remaining area of the palm became a mottled red. As long as pressure was maintained, the appearance of the hand remained unaltered when the pressure was removed, the hand gradually assumed its normal color. This phenomenon became less marked in degree and extent as the nerve function returned. After six weeks, sensation had returned to the palm, and the area of color change had decreased correspondingly. Ten weeks later the color phenomenon could still be elicited, but there was no remaining evidence of median nerve paralysis except anesthesia over the tips of the thumb, index and middle fingers.

Splenectomy for Purpura Hemorrhagica. — Eighty-one reported cases of splenectomy for thrombocytopenic purpura hemorrhagica are reviewed by Whipple, including four personal cases. He is convinced that this operation has contributed the greatest advance to the therapy of the purpuras, but it must be remembered that the favorable results are largely limited to the chronic variety. Furthermore, patients after splenectomy should be cautioned and guarded against infections, in order to obtain the best results

Nephritis in Pregnancy.—Many of the toxemias of pregnancy are associated with nephritis and can be classified as are other types of nephritis, not necessarily occurring in pregnancy The classification of Volhard and Fahr is followed by Rockwood et al The course of fifty-seven cases occurring during pregnancy is followed, together with the fate of the mother and child, over a period of three years Both nephritis and toxemia of pregnancy seem to be general diseases affecting the cardiorenal vascular system as a whole. When the toxemia of pregnancy is classified by the same method that Volhard uses for nephritis, a marked difference in the end-results is seen and this difference allows the physician to make a more accurate prognosis, both as to the mortality among the mothers and as to the fate of the child in subsequent pregnancies

Secondary Cancer of Umbilicus.—Besides reporting one case of cancer of the umbilicus secondary to adenocarcinoma of the cecum Head presents a clinical and pathologic summary of 101 instances of carcinoma of the umbilicus which have appeared in the literature

Varix of Superficial Epigastric Vein.—A varix of the superficial epigastric vein is reported by Hughson. The usual diagnostic signs were absent, possibly accounting for the erroneous clinical diagnosis of femoral hernia.

Antigenic Effect of Spermatozoa. — Fogelson's results confirm the work of others It is evident that there is an accurate method of temporarily inhibiting conception by sensitization of the female rat to any spermatozoa protein. This antigenic effect of spermatozoa is not specific for species, but equally good results can be obtained from the spermatozoa of any species The mechanism causing this sterility is still not clear

Acute Hemorrhagic Pancreatitis. — Butler and Delprat report an early case of acute hemorrhagic pancreatitis. As the pathologic changes were localized definitely to the tail of the pancreas, resection seemed the logical procedure The patient made a complete recovery.

Secondary Staphylococcus Meningitis.—The case reported by Moise showed a congenital sacral sinus with an underlying spina bifida and a direct connection between the skin and the spinal canal The occurrence in this case of a pilonidal sinus with an underlying spina bifida and an irregularity in the fusion of the sacral vertebrae is additional evidence in favor of the view that such sinuses are developmental anomalies resulting from a failure of the medullary canal to become completely obliterated. This lesion had given the patient no cause for worry until the eighteenth year of his life, when it served as the portal of entry for a meningeal infection. A sacral laminectomy with drainage was performed with subsequent recovery from the meningitis.

Hernia in Broad Ligament.—Dunn reports one case and gives a résumé of four cases recorded in the literature.

Partial Gastrectomy with Telescopic Anastomosis.—Instead of making an end-to-end junction of stomach and duodenum, Babcock turns the duodenum into the open end of the gastric mucous membrane and the outer end of the gastric stump after a high resection of the gastric mucous membrane and the outer serous surface of the duodenum is united to the inner surface of the denuded muscularis of the stomach The entire thickness of the cut end of the duodenum is united to the gastric mucosa The telescopic union is said to have the advantage of strength, reinforcement and mechanical adaptation. The depth of invagination is from 2 to 6 cm, and varies with the available length of the duodenal stump, and the amount of stomach resected

Anastomosis of Veins.—A method is described by Bird for anastomosing veins. No special instruments are necessary and the procedure may be carried out rapidly under direct vision with assurance of a successful outcome. A large, oval opening is provided

Tennessee State Medical Association Journal, Nashville

28: 249 280 (Jan) 1926

Abdominal Pain B Gaston, Lebanon —p. 249
Epidemic of Acute Pleurodynia in Tennessee R. B. Wood, Knoxville. —p 255
Acute Delirium C Deaderick, Knoxville —p 259.
End Results of Tonsillectomies and Andenoidectomies. D. H Anthony, Memphis —p 261
Sacral Anesthesia W Yeiser, Columbia —p 266.
Element of Time Importance in Surgical Procedure of Seriously Injured and Seriously Sick W B Burns, Memphis —p 270
Amputations in Industrial Surgery. W S Anderson, Memphis —p 272.

Texas State Journal of Medicine, Fort Worth

21: 633 690 (March) 1926

Physical Education in Schools in Relation to Medical Profession B A. McGlachlin, Port Arthur —p 646.
Dental Infections and Tuberculosis C C. Browning, Los Angeles —p 650
Municipal Sanitation R Hasskarl, Brenham —p 652
Control of Communicable Diseases from Health Officer's View. L H Martin, Austin —p 655
Nasopharyngeal Fibroma A F Clark, San Antonio —p 658
Prolapse of Rectum J W Nixon, San Antonio —p 660.
*Venoclysis or Intravenous Nutrition G A Hendon, Louisville, Ky —p 662
Treatment of Acute Brain Injuries C. C Nash, Dallas —p 666
Burns I E Colgin, Waco —p 668
Intracranial Hemorrhage in New Born E Davis, Fort Worth —p 670
*Treatment of Puerperal Sepsis H R Robinson, Galveston —p 675

Venoclysis.—Venoclysis has been resorted to by Hendon in the following conditions: virulent pelvic infection of a tubo-ovarian abscess and plastic work on the cervix and vagina; intestinal paresis following delayed operation for obstruction; emesis gravidarum; uremia; ruptured bowel and virulent puerperal infection following operation. In each instance, the use of venoclysis was begun after the usual remedies had been tried and had failed and the patient's condition seemed hopeless; hence, the mortality was necessarily high, but not discouraging.

Use of Mercurochrome in Puerperal Infection.—Robinson concludes that, from all reports so far, it is not possible to state that mercurochrome-220 soluble is a specific cure for blood stream infections. Robinson reports five cases in which a 1 per cent solution of mercurochrome was injected intravenously in 20 cc. doses.

West Virginia Medical Journal, Charleston

22: 113 168 (March) 1926

Prolongation of Life C Pope, Louisville, Ky —p 113
Hysteria C H Maxwell, Morgantown —p 120
Treatment of Eclampsia B S Clements, Matoaka —p 128
Chlorine in Treatment of Respiratory Infections C R Kessel, Morgantown —p 130
Surgery of Thyroid R P Bay, Baltimore —p 134
Medical Aspects of Thyroid Diseases D A Tucker, Cincinnati —p 130.
Gallbladder Disease J E Cannady, Charleston —p 142

Wisconsin Medical Journal, Milwaukee

25: 107 162 (March) 1926

Physiologic Aspects of Anemias C D Leake, Madison —p 107.
Clinical Aspects of Anemias G O Brown, St Louis —p 112
Anemia as Factor in Internal Diseases W J Egan, Milwaukee —p 117.
Blood Transfusion in Puerperal Infections R E Morter, Milwaukee. —p 119
Significance and Treatment of Anemia in Surgical Patients F. Raine, Milwaukee —p 121.
Preservation of Blood for Transfusion M C Perry, Milwaukee —p 123
Corrective Calisthenics for Gymnastic and Posture Classes: Klapp's System of Creeping Exercises. E. L Seiler, Kenosha —p 130.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Bristol Medico-Chirurgical Journal

43: 1-72 (Spring) 1926

Etiology of Cardiac Disease. C. F. Coombs.—p. 1.
Suprarenal Virilism. E. Fawcett, G. Hadfield and P. Philips.—p. 20.
Ocular Signs of Migraine. E. R. Chambers.—p. 29.

British Journal of Children's Diseases, London

23: 1-86 (Jan.-March) 1926

Development of Speech in Normal Child. M. Yearsley.—p. 1.
*Chronic Abdominal Pain in Children. K. U. Toverud.—p. 22.
Goiter in Children. H. L. Cronk.—p. 32.
Pneumothorax in Young Children: Case. A. Moncrieff.—p. 37.
*Palpable Arterial Coats in Children. A. E. Vipond.—p. 43.
Measles Complicated by Gangrene of Legs. D. J. Hishon.—p. 47.

Chronic Abdominal Pain in Children.—Toverud points out that chronic constipation will in some children sooner or later give rise to a picture that may suggest a severe disease. Recurrent abdominal pain is the most predominant feature of this condition besides general malaise. The condition covers mostly what in different pediatric textbooks has been described under the name of "colitis," "chronic gastric catarrh" or "intestinal colic." In Toverud's experience the cause seems mostly to be poor food and the child's bad habits. A change in the food to the so-called constipation diet (much fruit, vegetables, lactic acid milk and whole meal bread) and a change in the child's habits have been able to cure these children completely.

Palpable Arterial Coats in Children.—Vipond reports cases of arterial thickening in children. This condition is a familial one, and nonsyphilitic in origin. This arterial thickening is found in very young children; in fact, it is a congenital condition, and these children enter this world with a thickening of the whole of the arterial system. This must not be confounded with arterial diseases caused by congenital syphilis. It is a familial condition, and most of the children in the family have thickened arterial coats. The thickened condition of the arterial walls can readily be detected, and the artery can be felt to roll under the finger. When examining these little patients, one must make very gentle pressure with the finger tips. Whenever a child is thin and below the normal size, Vipond says it is well to look for palpable arterial coats.

British Journal of Medical Psychology, London

6: 1-83 (March 9) 1926

Moral Imbecility. I. A. F. Tredgold.—p. 1.
Id. II. C. Burt.—p. 10.
Id. III. M. H. Smith.—p. 47.
Id. IV. W. R. Thomas.—p. 55.
Id. V. F. C. Shrubsall.—p. 70.

British Journal of Ophthalmology, London

10: 113-176 (March) 1926

Roman Oculist Stamps in Britain. R. R. James.—p. 113.
Anophthalmus Congenitus in Puppy. H. Woollard.—p. 131.
Result of Treatment by Artificial Light on Phlyctenular and Other Tuberculous Lesions of Eye. A. B. Nutt.—p. 138.
Slit Lamp. M. S. Mayou.—p. 144.

British Medical Journal, London

1: 555-602 (March 27) 1926

Treatment of Exophthalmic Goiter. I. General Management. F. R. Fraser.—p. 555.
Id. II. Surgical Treatment. T. P. Dunhill.—p. 557.
Id. III. Treatment by Ligation. L. Rogers.—p. 561.
Dental Sepsis and Septicemia. E. M. Brockbank.—p. 562.
Dental Conditions Likely to Form Sources of Infection. B. J. Rodway.—p. 564.
*Obstruction of Small Intestine by Gallstones. C. Bennett.—p. 565.
*Tuberculosis Immunization. N. Raw.—p. 566.
Fracture of Skull and Extradural Hemorrhage with Symptoms of Hypotension. S. Smith.—p. 566.
Injections of Acriflavine for Tuberculosis. G. H. Johnson.—p. 567.
Paratyphoid A Fever in Scotland. A. M. Laurie.—p. 567.
Cystic Dilatations of Ureter: Removal of Ureteric Calculus per Vaginam. I. Atkin.—p. 568.
Sac of Cervix with Retained Menses. A. P. Linton.—p. 568.

Obstruction of Intestine by Gallstones.—Bennett reports three cases without mortality. In one case, a stone 1 inch (2.5 cm.) in diameter, weighing 140 grains (9.5 Gm.) was impacted in the ileum, 20 inches (50 cm.) proximal to the ileocecal valve. In the second case, the stone was a truncated cone. The greatest length equaled the greatest breadth; namely, 1⅕ inches (3 cm.). The dry weight was 180 grains (12 Gm.). It was lodged in the ileum, 4 or 5 inches (10 or 12.5 cm.) proximal to the ileocecal valve. The stone removed from the ileum in the third case was ovoid in shape, the greatest circumference being 5½ inches (14 cm.) and the weight was 636 grains (42.5 Gm.)

Active Immunization Against Tuberculosis.—Raw's experience with active immunization of animals against a virulent dose of tubercle bacilli has been encouraging, and he hopes that in the near future the work will be extended to young children, with a view to protecting those who are in daily contact with cases of open tuberculosis.

1: 603-640 (April 3) 1926

Endocarditis. T. Horder.—p. 603.
Frontal Sinus. W. O. Lodge.—p. 607.
Chronic Pelvic Pain in Women. A. Alcock.—p. 609.
*Noninfective Arthritis in Women. E. P. Cumberbatch and C. A. Robinson.—p. 612.
*Later Results of Insulin Treatment. A. P. Thomson.—p. 613.
Fissured Fracture of Thigh with Few Symptoms Until Month Later. H. A. L. Banham.—p. 615.
Acute Gastric Ulcer Associated with Pernicious Anemia. A. M. Pollock.—p. 615.
Chondrosarcoma of Index Finger. C. H. Lee.—p. 616.

Noninfective Arthritis in Women.—Cumberbatch and Robinson assert that there exist cases of arthritis occurring at either end of menstrual life which are not due to infection; that in some of these, at all events, the arthritis is due to deficiency of ovarian hormone, and that in these the arthritis and accompanying ill health are efficiently treated by heating the pelvic organs by means of diathermy.

Results of Insulin Treatment.—Of 100 patients with diabetes of all types treated by Thomson with insulin and dieting, seventy-five survive—sixty-one in good health and fourteen in poor or moderate health. Of the twenty-five deaths that occurred, one resulted from the treatment and ten others were not directly due to diabetes but may have been accelerated by it; in seventeen of the fatal cases there were definite complications. Of twenty-one patients with coma either actually treated in the stage of full unconsciousness or close to it, twelve recovered. Of the ten patients concerned, five remain in fairly good health; the others have since died. A type of persistent coma which Thomson believes particularly liable to occur in treatment by insulin is described. Recovery from this type of coma after intrathecal injection of insulin is recorded. The importance of early insulin treatment in young patients is emphasized. All patients who have kept a normal blood sugar and have remained free from glycosuria have done well; their condition at this time, however, does not appear materially better than that of those who have shown glycosuria at times but who nevertheless have managed to keep the early morning specimen free.

China Medical Journal, Shanghai

40: 185-308 (March) 1926

Public Health Work in Missionary Enterprise. W. W. Peter.—p. 185.
Hookworm in Kwong Tung. F. Oldt.—p. 240.
Opportunity for Preventive Medicine in China. F. J. Wampler.—p. 249.
Health for China's Children. I. M. Miller.—p. 253.
Growth of Chinese. V. B. Appleton.—p. 259.
Sewage Disposal Projects of Foreign Settlement of Shanghai. C. Harpur.—p. 264.

Glasgow Medical Journal

23: 161-240 (March) 1926

Miners' Nystagmus. F. Fergus.—p. 161.
*Sense of Smell. J. L. Halliday.—p. 182.
*Cardiopulmonary Syndrome in Early Rheumatism. O. H. Mavor.—p. 200.
*Variation in Mortality from Cancer Among Persons in Different Districts of Glasgow and Its Relationship to Social Status. M. Young.—p. 205.

Sense of Smell.—Halliday asserts that the responses of odors may be considered as a form of chemotaxis; in man they remain primitive in type, and consist mainly of mass movements of attraction or repulsion. Smells have no intellectual value, as integration at the higher levels does not occur. Grouping of smells does not take place in the mind, as there is no abstraction of qualities common to a series of smells. The individuality and isolation of the responses to odors largely explain the infinite variety of smells. As no real mental grouping occurs, the construction of a spectrum of odors would appear to be a human impossibility; for a similar reason the theory that an art could be founded on odors is fallacious. As there is no abstraction of their qualities, symbolic formulation of smells cannot take place. The expression in speech of the conscious responses to odor is therefore limited, and there is a natural aphasia which corresponds to certain cases of acquired aphasia in which an anatomic lesion produces a dissolution of the higher levels of function.

Cardiopulmonary Syndrome in Rheumatism.—In the routine examination of cases of rheumatism Mavor has been impressed with the appearance of a certain group of signs over the base of the heart. This group is present in cases in which there is at least a presumption of rheumatic infection, and may or may not coincide with other cardiac manifestations. The signs are not susceptible of being recorded by instruments or corroborated and explained by postmortem examination. The phase of the disease at which they occur is seldom mortal. The signs are as follows: The cervical veins are visible and pulsating, and this is usually more obvious on the left side of the neck. The veins appear to collapse on ventricular systole. On very slightly forced inspiration they stand prominently. Pulsation is visible, or at least palpable in the second and third left interspaces. A faint diastolic shock is felt in this area. The resting pulse is rapid—about 100 per minute. Tachycardia, with some irregularity, appears on exertion. Percussion yields a relatively dull note from the first interspace to the base of the precordial dulness, and for an inch and a half or more to the left of the sternum. Over this area the respiratory murmur is bronchovesicular, and the bronchial sounds are audible horizontally for twice the distance over which they can be heard on the right side. A local cog-wheel rhythm is very common, and vocal fremitus, vocal resonance and whispered sounds are relatively increased. A peculiar bruit is heard in the neighborhood of the second left interspace close to the sternum. It begins at, or very shortly after, the closure of the first sound. It is loud, moderately pitched, and rather rasping, like the passage of a hard cloth-brush over silk. It runs crescendo up to an accentuated second sound, whose quality is like that of the rapping first sound in classic mitral stenosis. The bruit may, in some cases, begin as a soft blow masking the close of the first sound, but it always takes on a harsh quality as it gathers volume. Outside this area, a common pulmonary systolic murmur may be heard. The bruit does not necessarily vary with respiration, but if it does, it becomes first louder and then fainter on inspiration. Forced inspiration may abolish it. It is louder when the patient sits up or takes the knee-elbow position. It may disappear altogether for a period of days and may vary in intensity during a single examination. During its absence the second sound is often reduplicated.

Social Status and Cancer Mortality.—The medical officer of health for the city of Glasgow has hinted that cancer in Glasgow among the leisure classes is more than twice as prevalent as it is among the wage earners. Young, on the other hand, fails to find any evidence of coincidence between a relatively excessive mortality rate from cancer in the municipal wards of Glasgow and high social status of the residents therein, such as might be inferred from their crude mortality rates for this disease; indeed, the correlation coefficients that have been calculated appear to suggest that a definite tendency to the converse relationship exists.

Irish Journal of Medical Science, Dublin

Sixth Series, 105-152 (March) 1926

History of School of Physic, Trinity College, Dublin. T. P. C. Kirkpatrick.—p. 110.
Suppression of Gastrojejunostomy. V. Pauchet.—p. 124.
Congenital Hypertrophic Pyloric Stenosis. W. Taylor.—p. 128.
Prophylaxis of Diphtheria. V. M. Synge.—p. 131.
*Meningitis Carcinomatosa. T. G. Moorhead and T. J. Wigham.—p. 135.

Meningitis Carcinomatosa.—The patient, whose case is reported by Moorhead and Wigham, complained of pain in his head, vomiting and breathlessness. He was extremely cyanosed. He presented the typical phenomena associated with meningitis. The diagnosis was serous meningitis, following influenza, or some similar infection. A postmortem examination was refused, but the brain and spinal cord were removed. Apart from the very slight thickening here and there of the pia mater, absolutely nothing abnormal could be detected. Microscopic sections disclosed a tumor growth of endothelial type covering over practically the entire cerebral cortex, and also the cerebellum. The growth was far too thin to be visible to the naked eye, except here and there as a slight opacity of the pia. In the spots in which the pia appeared most thickened, the tumor formation was extending into the brain, its most characteristic arrangement being a single row of cells surrounding vessels. In these areas also the brain occasionally showed necrosis, nothing but the vessels and tumor cells being left intact. This penetration was most plainly to be found in the cerebellum in which the cells were mostly in small solid columns with only slight tendency to the formation of a hollow tube. In a few places the cells formed larger masses; even then there was some slight tendency for the cells to lie in rows. Examination failed to reveal any definite tumor mass which might be the primary focus from which the rest was derived.

Journal of Laryngology and Otology, Edinburgh

41: 137-208 (March) 1926

Investigations on Development of Sphenoidal Sinus. P. H. G. van Gilse.—p. 137.
Investigation of End-Results of Sixty Cases of Radical Mastoid Operation with Special Reference to Hearing. J. A. Keen.—p. 145.
*Four Cases of Tracheal Tumors. J. Adam.—p. 174.
Cerebellar Cyst, Simulating Tumor of Right Acoustic Nerve, Operated on by Translabyrinthine (Panse) Method. W. B. Brownlie and J. M. Wishart.—p. 178.
Chronic Hyperplasia of Upper Jaw. J. A. Jones.—p. 184.

Tracheal Tumors.—Adam's cases were: endothelioma, two cases; sarcoma and fibroma, one case of each. Adam warns that tracheal tumor is liable to be mistaken at first for asthma. This mistake occurred in two of his cases.

Journal of Tropical Medicine and Hygiene, London

29: 69-84 (March 1) 1926

Yellow Fever Problem in Africa. W. H. Hoffmann.—p. 69.
Malaria in West Africa in 1893. G. R. Hall.—p. 70.

19: 85-100 (March 15) 1926

Treatment of Trypanosomiasis in Uganda. C. H. Marshall and S. M. Vassallo.—p. 85.
Environmental Influences Which Favor Development and Spread of Bilharzia Parasite in South Africa: Food Supply of "Physopsis." F. G. Cawston.—p. 89.

Lancet, London

1: 695-744 (April 3) 1926

Endocarditis. T. Horder.—p. 695.
Development of Psychopathology: Its Place in Medicine. B. Hart.—p. 700.
*Treatment of Ileus by Choline. C. G. L. Wolf and J. R. C. Canney.—p. 707.
*Amount of Antitoxin to Streptococcus Scarlatinae Present in Blood of Convalescent Scarlet Fever Patients. H. Henry and F. C. Lewis.—p. 709.
*Herpes Zoster Oticus and Allied Conditions. T. Guthrie.—p. 710.

Treatment of Ileus by Choline.—While engaged in an investigation of the rhythmic movements of the small intestine in 1912, Weiland made the chance observation that when a piece of isolated intestine was allowed to contract in Ringer's solution for some time the fluid acquired the property of exciting contraction in other pieces of intestine placed in it. Le Heux, another worker in Magnus' laboratory in Utrecht, isolated the substance causing this effect and identified it as choline. This base is related chemically to muscarine, the principle found in poisonous mushrooms. Wolf and Canney report three cases of ileus in which choline appeared definitely to restore muscular tone and contraction in the intestinal wall, in one of the cases, after all other remedies had failed over the space of three days. The administration of choline is a simple matter. Sterile choline hydrochloride is put up in glass ampules containing 600 mg. in 6 cc. This solution is diluted with 180 cc. of sterile physiologic sodium chloride solution, and the resulting solution is injected intravenously. An important point in administration is that it should take at least seventeen minutes to inject the whole quantity.

Scarlet Fever Antitoxin in Convalescent's Blood.—If the unit of antitoxin is taken as that amount which gives complete neutralization of one skin test dose, then out of twenty scarlet fever children, seventeen were found by Henry and Lewis to yield a serum which contained 50 units or more of antitoxin, whereas of the nonscarlet fever children only eight reached this titer. Of the twenty children with scarlet fever, nine yielded a serum containing 125 units or more, whereas only three of the children not having scarlet fever did so. The 250 unit level was reached by five scarlet fever children and by one nonscarlet fever child.

Herpes Zoster Oticus.—Three cases are reported by Guthrie, the first two being characteristic examples of herpes zoster oticus, and the third a case of herpes facialis with eighth nerve symptoms.

Medical Journal of Australia, Sydney

1: 261-286 (March 6) 1926

*Fever Resembling Mild Form of Typhus Fever. F. T. Wheatland.—p. 261.
Some Urinary Complications and Their Management. S. H. Harris.—p. 266.
Value of Ventriculogram in Localization of Cerebral Tumors. R. Noble.—p. 268.
Surgical Technic of Pneumoventriculography. R. H. P. Monson.—p. 271.
Technic of Cisternal Puncture: Application in Treatment of General Paralysis by Arsenicalized Serum. B. T. Edye.—p. 272.
Case of Chronic Enlargement of Tonsils Requiring Emergency Tracheotomy. B. K. Watkins.—p. 273.

Fever Resembling Typhus.—A fever of about twelve or fourteen days' duration, characterized by severe headache and a macular rash on the body and limbs, is described by Wheatland. The fever is believed to be identical with that described by Hone in Adelaide. It is not contagious. It is probably transmitted by some ectoparasite associated with the mouse. Wheatland suggests the existence of a group of diseases resembling typhus fever of which this fever is a member.

Oriental Journal of Diseases of Infants, Kyoto

1: 1-50 (Jan.) 1926

Congenital Bone Syphilis. T. Suzuki.—p. 1.
Beriberi Control from Administrative Standpoint. J. W. H. Chun and Wu Lien Teh.—p. 25.
*Diagnostic Sign in Pneumonia of New-Born. K. Hatai.—p. 36.
Dysentery in Children Caused by Mixed Infection with Y Type Dysentery Bacillus and Micrococcus Tetragenus-Aureus. K. Yoshitomi.—p. 39.
Dysentery in Nurslings in Orient. N. Hoshi.—p. 41.
Roentgen-Ray Study of Skulls of Japanese Children. K. Okashima.—p. 43.
Lung Abscess in Nursling Caused by Pneumococcus. R. Yoshida.—p. 44.

Diagnostic Sign of Pneumonia in New-Born.—The sign described by Hatai is an attack of asphyxia. He believes that it is caused by a weakness of the respiratory center. It indicates severity of involvement but not necessarily an unfavorable prognosis, as many of these patients survive.

Tubercle, London

7: 313-368 (April) 1926

*Sanatorium Treatment in India. C. Frimodt-Möller.—p. 313.
*Tuberculosis Inoculata of Guinea-Pig. G. R. Ross and W. J. Tulloch.—p. 321.
Sanatorium Treatment as Provided by United States Government for Tuberculous Veterans of World War. E. H. Bruns.—p. 335.
Experimental Results with Sanocrysin at Chicago Municipal Tuberculosis Sanitarium. H. C. Sweany.—p. 343.

Sanatorium Treatment of Tuberculosis in India.—The evidence presented by Frimodt-Möller shows that sanatorium treatment of tuberculosis in India is apparently of equal value to that in the West, and, when Indian conditions are taken into consideration, perhaps of even greater value.

Tuberculosis Inoculata in Guinea-Pigs.—Ross and Tulloch have succeeded in producing a slowly progressing tuberculosis in the guinea-pig by the subcutaneous inoculation of measurable and easily handled quantities of virulent cultures.

Archives des Maladies de l'Appareil Digestif, Paris

15: 991-1118 (Dec.) 1925

Intestinal Parasitism and Tuberculosis. A. Cade et al.—p. 991.
Volvulus of the Appendix. J. Leveuf and A. Moruzi.—p. 1005.
*Serologic Test in Diagnosis of Gastric Cancer. A. Roccavilla.—p. 1012.

Serologic Test for Gastric Cancer.—Roccavilla thinks that Salomon's test can be dependable if an extremely potent immune serum is used for the test. He found the response constantly negative in five subjects with normal stomachs, and positive in eight of ten with cancer of the stomach. The exceptionally potent anticancer immune serum was obtained from rabbits prepared by repeated injections of an emulsion of resected gastric cancer tissue; the controls by injections of simple fasting gastric juice. The reaction allowed identification of the patient's endogastric proteins, revealing or excluding malignant disease with nearly 90 per cent accuracy.

16: 3-152 (Jan.) 1926

*Rôle of Infection in Peptic Ulcer. P. Duval et al.—p. 3.

Infection in Gastric and Duodenal Ulcer.—This entire issue is devoted to research on the share of infection in the evolution of gastric and duodenal ulcers. Duval and his co-workers describe how infection modifies the clinical symptoms and the histologic and biologic findings even of perforated ulcer. No operation should be attempted during an acute phase of infection or before the abnormal biologic reactions have disappeared. To prepare the patient for the operation is thus the main thing. Bed rest, preoperative vaccination, and operating in sound tissues improve the prognosis.

16: 153-272 (Feb.) 1926

*Tetany of Gastric Origin. R. Grégoire.—p. 153.
Colectomy. A. G. Weiss.—p. 169.
Phenoluria and Urobilinuria. E. Binet and A. M. de Fossey.—p. 226.

Surgery in Tetany of Gastric Origin.—Grégoire discusses the explanation of tetany associated with gastric disturbances. Obstruction of the pylorus and subsequent repeated vomiting entail a reduction of hydrochloric acid in the organism, and thus induce physical and chemical changes in the blood serum. This causes irritation of the nervous system and tetany. When symptoms denote an impending attack of tetanic spasms, it may be averted by injections of from 800 to 1,000 Gm. of physiologic salt solution, with or without addition of 10 Gm. of sodium bicarbonate. This combats the dehydration. The next step is to remove the obstacle in the pylorus. Gastro-enterostomy is sufficient in most cases; otherwise, it has to be completed by a more radical operation later. While with expectant treatment the death rate has averaged 80 per cent, after operative treatment it dropped to 37 per cent.

Archives de Médecine des Enfants, Paris

29: 73-129 (Feb.) 1926

The Craniotabes Bugaboo. J. Comby.—p. 73.
*Hypertrophy of the Heart in Infants. G. Mouriquand et al.—p. 83.
Rat-Bite Fever in Paris Region. E. Apert et al.—p. 92.
Treatment of Imperforate Anus. E. Desmarest and D Ebrard.—p. 96.
*Mutism in Typhoid in Children. E. Debbas.—p. 102.
The Erythredema of Young Children. J. Comby.—p. 105.

Hypertrophy of the Heart in Infants.—Mouriquand, Bertoye and Charleux describe a case of hypertrophy of the heart in an infant, aged 13 months. The hypertrophy was associated with grave anemia. The systolic murmur heard in the precordial region was so intense as to suggest interventricular communication. Necropsy showed the interventricular septum intact, with coexisting hypertrophy of the kidneys. The latter as well as the heart appeared histologically sound. Thus the murmurs were merely of inorganic origin. The rarity of these murmurs in infants is explained by the relatively weak contractions of the myocardium at that age.

Dumbness Accompanying Typhoid in Children.—Debbas has observed within a year four cases of dumbness in the course of typhoid, in children, aged from 3 to 7. In one instance it persisted for ten days; in three for a month. In none of these cases was there any meningeal reaction.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 452-508 (March 19) 1926

*Research on the Dick Test. Lesné and Dreyfus-Sée.—p. 452.
Unilateral Paralysis of Cranial Nerves. G. Guillain et al.—p. 456.
Multiple Interauricular Openings. M. Villaret et al.—p. 460.

Venous and Capillary Pressure in Raynaud's Syndrome. M. Villaret and L. Justin-Besançon.—p. 465.
*Fixation Abscess in Septicemia. M. Villaret et al.—p. 472.
*Significance of the Dick Test. R. Debré et al.—p. 476.
*Cerebrospinal Fluid in Serum Sickness. V. de Lavergne and E. Abel —p. 488.
*Phenoluria and *Diuresis.* M. E. *Binet et al.*—p. 491.
Hair System with Hyperthyroidism. P. Sainton and J. Peynet.—p. 493.
Splenic Anemia of Spirochetal Origin? M. Raynaud et al.—p. 496.
Atresia of Tricuspid Valve. J. Cathala and Tisserand.—p. 501.
The Dick Test in Measles. J. Paraf.—p. 506.

The Dick Test.—Lesné and Dreyfus-Sée relate that pseudoreactions were avoided when using Zoeller's toxin (purified by acetic acid and sodium chloride). They applied this toxin in seventeen children, aged from 2 to 13, without any scarlet fever history. In eleven the Dick test was positive; it was negative in six, thus testifying to a spontaneous immunity. In a group of twenty-one with scarlet fever, the reaction was positive in seven and negative in five by the third to the seventh day. Of fifteen convalescent children, the Dick test was negative in twelve; positive in three on the twenty-sixth to thirty-fourth day. The test was also negative in a child who had had scarlet fever several years before. Their conclusion is that the Dick test cannot be applied in diagnosis of scarlet fever, present or past. Neither does it testify unerringly as to the receptivity or immunity of a subject, or prove the streptococcus toxin theory as to the cause of the disease.

Septicemia with Recovery After Fixation Abscess.—Villaret and his co-workers observed multiple manifestations of staphylococcus septicemia in a tuberculous young man. The usual drug treatment as well as vaccines were without avail for five months, until finally an abscess developed spontaneously on the right thigh. It was incised and the general condition improved and no local or general signs of the staphylococcus infection have reappeared during the four months since. The simultaneous improvement of the tuberculous lesions in the lung may be ascribed, they think, to humoral changes and increased leukocytosis induced by this spontaneous fixation abscess.

The Dick Test from Standpoint of Immunity to Scarlet Fever.—Debré, Lamy and Bonnet have applied the Dick test in 677 children. The reaction was positive in 25 per cent under 1 year; in 44 per cent from 1 to 3 years, gradually dropping to 15 per cent at the age of 15. The proportion of positive reactions in 122 adults was 10 per cent. At the onset of scarlet fever the Dick test was positive in eight of nineteen children; negative in ten, and a pseudoreaction was noted in one. In all of sixty-four convalescent children, the reaction was negative. In four cases of scarlet fever a positive Dick test had been recorded a few weeks or months before. The reaction became negative in all in the course of convalescence. In ten instances a mild form of scarlet fever appeared within forty-eight hours after one or repeated injections of streptococcus toxin. They query whether this was a mere coincidence, or whether a minimal dose of toxin had induced phenomena of sensitization in bacilli carriers. The extinction of a positive Dick test by a mixture of toxin and serum paralleled always the blanching of the scarlet fever eruption in the Schultz-Charlton test. The intradermal reaction was applied in ten cases of different streptococcus affections; in nine it was negative; a pseudoreaction appeared in the tenth. They conclude that the Dick test cannot help in diagnosis of scarlet fever; but it may reveal whether or not there is immunity to the disease, and indicate the proper serum for prophylaxis or treatment of scarlet fever.

Changes in Cerebrospinal Fluid in Serum Sickness.—De Lavergne and Abel examined the cerebrospinal fluid of twenty children and adults with serum sickness, especially with generalized urticaria, after one or repeated injections of an antiserum. There was an increase of sugar, and lymphocytosis; the amount of albumin remained normal. Coexistence in these cases of headache, nausea and vomiting suggests a possible meningeal reaction, responsible for the changes in the cerebrospinal fluid. Meningeal reactions and subsequent radiculitis may explain certain paralyses following injections of serum.

Phenol Autointoxication and Diuresis.—Binet, Mathieu de Fossey and Goiffon noted an exaggerated content of phenol in the urine in seven of eleven cases of colitis, and in six of eight cases of obesity, diabetes, gout or overeating. High phenoluria was manifest only in two of nine cases of constipation, without colon disturbances. There was pronounced phenoluria in ten out of eleven cases with associated lesions of the cecum, colon or gallbladder. This was always accompanied by an excessive urobilinuria. In twenty of twenty-five cases of phenoluria, the diuresis was increased; in the others there was only 1 liter of urine or even less, in twenty-four hours. Phenomena of auto-intoxication existed only in the latter. It thus appears that not only the liver neutralizes a part of the phenols from intestinal putrefactions, but there is also an elimination by way of the kidneys, a compensatory diuresis.

Bulletin de la Soc. des Sciences Méd., Montpellier

6: 469-502, 1925

*The Neuroglia and the Third Element in the Nerve Centers. P. del Rio Hortega.—p. 469.

The Third Element in the Nerve Centers.—Del Rio Hortega's fine photomicrograms sustain his assertions in regard to the third element in the nerve centers, which he calls provisionally the microglia. It is always more abundant in gray matter than in white, and seems to occur identically in all vertebrates. It migrates to points where it is needed, and hypertrophies, adapting itself to local space conditions, and phagocyting the waste products of nerve tissue. In these various phases it has been called by different names, and conflicting theories have been based on it. He regards its scavenger function as part of its general task to keep away from contact with the neuron everything that might hamper the exalted function of the latter.

Comptes Rendus de la Société de Biologie, Paris

94: 233-300 (Feb. 5) 1926. Partial Index

*Electromyograms. C. Laubry et al.—p. 240.
The Bacteriophage and Killed Bacteria. F. Duran Reynals.—p. 242.
*Invisible Forms of Visible Bacteria. P. Hauduroy.—p. 246.
Effect of Roentgen Rays on Plant Cells. G. Nadson and E. Rochlin-Gleichgewicht.—p. 249.
Filtration of Virus from Mouse Sarcoma. Harde and Henri.—p. 251.
Action of Atropine on Heart Rhythm. Hazard and Mercier.—p. 254.
Resistance of Guinea-Pigs to Toxins plus Tapioca. Grasset.—p. 260.
Freezing Method for Production of Autoneurotoxin. Speransky.—p. 262.
Serum Treatment of Mental Diseases. M. Weinberg.—p. 264.
*Cholesterol and the Spleen. E. E. Abelous and L. C. Soula.—p. 268.
*Hemolysis and Amino-Acids. Loeper et al.—p. 271.
Formation of Amino-Acids in the Spleen. Loeper et al.—p. 272.
*Parallel Development of Thyroid and Pancreas. M. Aron.—p. 275.
*Hypercholesteremia and Cataract. D. Michail and P. Vancea.—p. 291
Eye Implant in the Peritoneum. D. Michail and P. Vancea.—p. 294.
Passive Anaphylaxis. I. Moldovan and M. Zolog.—p. 299.

Electromyograms and Muscle Fatigue.—Laubry, Walser and Deglaude isolated the gastrocnemius muscle of a frog (with intact nerve and vessels) and exposed it to the faradic current. The recorded electromyograms resembled the electrocardiograms usually attributed to block of branches of the bundle of His. Of course no conduction apparatus could be involved in these muscle experiments. It is possible that the changes revealed by the electrograms are in both instances of muscular origin; namely, due to muscle fatigue.

The Invisible Forms of Visible Bacteria.—Hauduroy found abnormal forms of bacteria in polluted well waters, which he isolated by filtration. Further research demonstrated different stages of these bacteria. First the bacteria are invisible; then they acquire a granular form; and finally change to the form by which they are known now.

The Cholesterogenous Property of the Spleen.—Abelous and Soula severed the crural and sciatic nerves in chloralosed dogs, and then excluded the spleen from the general circulation. After the peripheral ends of the nerves had been faradized for five minutes, blood was withdrawn from the femoral artery and vein. There was less cholesterol in the venous blood than in the arterial, while there was more cholesterol in the vein than in the artery after the circulation had been restored in the spleen. This seems to confirm that the internal secretion of the spleen increases the amount of cholesterol.

Hemolysis and Amino-Acids.—Loeper, Decourt, Olivier and Lesure conclude from their research that hemolysis is one source of amino-acid formation as well as of formation of the bile pigment. A part of the amino-acids may be produced by hemolysis occurring in the spleen itself.

Parallelism of Thyroid and Pancreas Development.—Aron observed that the appearance of colloid secretion in the thyroid coincided with that of Langerhans' islands in the pancreas. Both organs develop very early in the cow fetus; in the pig fetus, only during the last weeks of intra-uterine life; in the guinea-pig fetus during the last days. The functional characters of the thyroid and pancreas are definitely established simultaneously in the human fetus, at the end of the third month of pregnancy.

Hypercholesteremia and Naphthalene Cataract.—Rabbits were fed a mixture of glycerin and naphthalene. Lesions of the retina appeared by the twelfth to twentieth day, followed by bilateral cataract. The eye phenomena were preceded by a two or threefold amount of cholesterol in the blood. The theory is that disturbances of the suprarenal secretion may induce cholesteremia and the eye lesions. Michail and Vancea emphasize the analogy between the hypercholesteremia from naphthalene and the hypercholesteremia with senile cataract. With congenital or juvenile cataract, the cholesterol content of the blood is normal. It is possible that deranged functioning of the suprarenals may be a factor in senile cataract, and deranged functioning of the thyroid and parathyroids a factor in congenital or juvenile cataract.

Encéphale, Paris

21: 1-88 (Jan.) 1926

Multiform Deliriums. R. Targowla.—p. 18.
*Tumors of the Frontal Lobe. P. Escuder Núñez.—p. 37.
True Paranoia. H. Claude and M. Montassut.—p. 57.
*Pupil Immobility with Alopecia Areata. E. Herman.—p. 64.

Tumors of the Frontal Lobe.—Escuder Núñez reviews the clinical syndrome of tumors of the frontal lobe as observed in two personal cases and in sixteen recorded observations. Unilateral loss of the sense of smell, choked disk, deviation of the head and feet to the opposite side, or paralysis of the movements of the head and eyes to the opposite side are the sensory and motor symptoms. The psychic symptoms from excitation include hyperexcitability of the imagination, and moral insanity; from inhibition, somnolency and partial stupor, with or without other general symptoms of a brain tumor, headache, vomiting, dizziness, intraspinal hypertension, etc. A two-stage operation seems to be preferable to a single sitting. The first stage of decompression is often followed by improvement, and sometimes by survival for several years. Béclère and Nordentoft have reported remarkable results from radiotherapy, combined or not with an operation. He has had no personal experience in this field.

Alopecia Areata of Sympathetic and Endocrine Origin.—Herman reports a case of alopecia areata in a girl, aged 14. The affection, starting three years before after a severe fright, was accompanied by epileptic seizures. It induced loss of hair of the head and body as well as of the eyebrows and lashes. Clinical examination revealed general debility, insufficiency of the ovary and pituitary, possibly also of the thyroid gland. Besides the endocrine disturbances, there were phenomena of *sympathicotonia*, including spontaneous dilatation of the pupils and transient immobility to light. This may have been caused by excessive irritability of the sympathetic system and consecutive spasm of the dilator of the *iris*.

21: 89-160 (Feb.) 1926

*Bulbar Syndrome. G. Marinesco and S. Draganesco.—p. 89.
*General Paralysis. Sézary and Barbé.—p. 99. Begun. p. 1.
Malaria Treatment of General Paresis. Nicole and Steel.—p. 116.
Brain Tumor with Psychasthenic Syndrome. Marchand and Schiff.—p. 121.

Syndrome from Interolivary Region.—The syndrome was observed by Marinesco and Draganesco in a previously healthy man, aged 55. The disease had commenced ten years before with paresis of one side of the body, five years later involving the other side. Finally bulbar disturbances appeared, such as difficulty in swallowing, and in the use of the tongue, sometimes aphonia. The case was considered a form of amyotrophic sclerosis or atypical syringomyelia. The necropsy findings showed atherosclerosis of the spinal cord, pons and medulla, especially of the region between the olivary bodies. The large patch of necrosis in the latter region explains the paralysis of all the limbs. Coexistence of intraneuraxial neuromas, as well as the incomplete development of the medulla and spinal cord suggest a possible congenital origin of the disease. The six somewhat similar cases on record all ran a rapid course.

Drugs in Treatment of General Paralysis.—Sézary and Barbé compare the action of different drugs in eighty-eight cases of general paralysis. They conclude that arsenicals are most effectual, while they influence favorably the mental condition of the patients. The quinquivalent are usually superior to the trivalent. Bismuth has no action on the mental condition but, owing to its biologic action, especially on the leukocytosis of the cerebrospinal fluid, it may be used as an adjuvant in treatment of general paresis.

Lyon Chirurgical

23: 1-134 (Feb.) 1926

The Albee Operation for Pott's Disease in Adults. L. Bérard and J. Creyssel.—p. 1.
*The Normal Stomach Secretion. E. Dahl-Iversen.—p. 14.
So-Called Sarcomas of the Kidney. R. Noel et al.—p. 30.
Strangulated Obturator Hernia. P. Bonnet.—p. 44.
*Ramisection. R. Leriche.—p. 60.
Flexner's Book "Medical Education." A. Policard.—p. 65.

The Normal Gastric Secretion.—Dahl-Iversen's experiments were made with thirteen young men and two young women—all healthy—and he tabulates the findings separately for each one for a week. An hour after an oatmeal gruel meal, with phenolphthalein for the indicator, the figure averaged 47, while with bromin-cresol-purple as the indicator, the figure was 41. With the Ewald test meal, the phenolphthalein figure was 54. He was astonished at the wide variations in the findings in different persons and at different times in the same person under apparently identical conditions. No influence from tobacco was apparent.

Ramisection.—Leriche has severed the rami communicantes in the neck in eighteen cases. The operation does not modify the sensations of contact, cold, heat and pain but it alters that mysterious internal sense of the reality of the existence of our body. He describes one case in which a man with an extremely painful amputation stump, and hallucination of painful contracture in the fingers of the missing hand, was freed from all his pains and hallucinations by ramisection from the second cervical to the first dorsal rami. Such cases suggest a new field for surgical treatment of painful and perverted cenesthesia, that is, the sense of conscious existence, of normal functioning of the organs of the body. The rami communicantes seem to be the vehicle for transmission of the cenesthesia stimuli.

Paris Médical

59: 293-308 (March 27) 1926

*Tuberculosis After Operations. Bezançon and Jacquelin.—p. 293.
Rare Forms of Extra-Uterine Pregnancies A. Schwartz.—p. 297.
Various Technics for Blood Transfusion. A. Tzanck.—p. 301.
Forms of Pneumobacillus Sore Throat. J. Chalier et al.—p. 305.

Flaring Up of Tuberculosis of the Lung After Operations Elsewhere.—Bezançon and Jacquelin report seven cases in which an operation for nontuberculous affections as, for instance, appendicitis or hernia, was followed by development of tuberculosis in the lung. In four instances this occurred after ether; in three after chloroform. They never observed it after nitrous oxide or any local anesthetic. The skin test was applied in eighty-six cases after operation. It was negative in 40 per cent after ether; in 25 per cent after chloroform, and only in 7 per cent after intraspinal anesthesia. The fact confirms the toxic action of ether and chloroform on the liver; the postoperative anergy appearing as a form of liver anergy. Therefore in patients with suspected or a developing tuberculosis, an operation should be made preferably under local or intraspinal or even nitrous oxide anesthesia.

Union Médicale du Canada, Montreal

55: *1-66 (Jan.) 1926*

Centenary of the "Journal de Médecine de Quebec." L. Pariseau.—p. 1.
*Scarlet Fever Antiserum in Hospitals. H. B. Cushing and Longpre.—p. 8.
Differential Diagnosis of Certain Scalp Diseases. A. Marin.—p. 15.
Acute Appendicitis. E. Trottier.—p. 27.
Ovarian Graft and Hysterectomy. A. Achpise.—p. 30.
Treatment of Typhoid Fever. A. LeSage.—p. 35.

Use of Scarlet Fever Antiserum in Montreal Hospitals.—Seventy-five nurses of the Alexandra Hospital entering the contagious disease service were given an immunizing dose of scarlet fever antiserum. About 9 per cent of them developed a mild form of the disease three weeks later. The preceding experience had been, before this attempt, that 15 per cent of all the nurses contracted grave scarlet fever during their service. It appears that the immunization from the scarlet fever antiserum does not last more than three weeks. A total of 125 scarlet fever patients have been treated with concentrated antiserum in the last six months. A dose of 5 cc. was injected intramuscularly in benign cases; 10 cc. by the vein in grave cases. There was no fatal outcome among those thus treated. In 200 patients of the Alexandra and St. Paul Hospitals, treated with this serum, the common complications of scarlet fever occurred more rarely, and they were always mild. No symptoms of serum sickness were noted after the concentrated serum was employed. The effect seems to be like that observed in diphtheria with antitoxin treatment.

Schweizerische medizinische Wochenschrift, Basel

56: 241-264 (March 20) 1926

*Technic for Filling Cavity in the Lung. A. Josefson.—p. 241.
Psychogenesis of Leukorrhea. W. von Arx.—p. 243.
*Sclerodermia and Roentgen-Ray Castration. P. Schwarz.—p. 246.
*Fat Embolism. R. Weingarten.—p. 248.
*Habitual Epistaxis. Gallusser.—p. 250.
*Heart in Exophthalmic Goiter. G. Bickel and E. Frommel.—p. 251.
Iodin in Proprietary Preparations. Hunziker.—p. 257.

Technic for Filling Cavity in the Lung.—Josefson has devised a combination of syringe and spatula to facilitate injection of contrast and therapeutic substances into the lungs.

Scleroderma and Roentgen-Ray Castration.—Schwarz' patient—a woman constitutionally substandard—developed scleroderma after sterilization by roentgen rays at the age of 40.

Fat Embolism.—Weingarten's study of 100 necropsies revealed no endogenous cause for the fat embolism—especially no nephritis. Slight traumas may be easily overlooked. Injections of camphorated oil may cause considerable accumulation of oil in the pulmonary capillaries.

Habitual Epistaxis.—Gallusser recommends submucous resection of the septum in habitual nosebleed and with a perforating ulcer of the septum.

The Heart in Exophthalmic Goiter.—Bickel and Frommel declare the prognosis in cardiac disturbances in exophthalmic goiter at the same time is infinitely better and infinitely worse than in heart disease of other origin. The prognosis is more favorable because severe arrhythmia and weakness may be followed by complete recovery, and the prognosis is graver because sudden death may occur with apparently slight changes of the heart.

Pediatria, Naples

34: 281-336 (March 15) 1926

*Desensitization in Infectious Diseases. G. Di Cristina.—p. 281.
*Acute Syphilitic Meningitis. A. Mazzeo.—p. 299.
Roentgenology of Whooping Cough. P. Pincherle.—p. 316.
Pathology of Consanguinity. F. De Capua.—p. 321.

Desensitization in Infectious Diseases.—Di Cristina deals with the specific inhibition of sensitization to bacterial proteins in infectious diseases, especially typhoid. Complete remission may follow an intravenous injection of the vaccine. The mechanism of the phenomenon is not clear, but the results are excellent.

Acute Syphilitic Meningitis.—Mazzeo reports four cases of grave acute meningitis in children between 5 and 24 months of age. The Wassermann test in the cerebrospinal fluid was positive, and the children recovered completely after use of mercurial ointment.

Policlinico, Rome

33: *361-394 (March 15) 1926*

A Family of Hemophiliacs. R. Monteleone.—p. 361.
*Duodenal Alimentation. A. Trossarelli.—p. 365.
Dissociated Action of Insulin? A. Sanguinetti.—p. 368.
*Treatment of Malaria. V. Ascoli.—p. 370.

Duodenal Alimentation.—Trossarelli recommends Einhorn's method in treatment of gastric ulcers.

Treatment of Malaria.—Ascoli found quinidine more effectual in malaria than quinine. The action of cinchonine was less good.

33: 117-164 (March 15) 1926. Surgical Section

Gastric Secretion After Resection. M. Ascoli.—p. 117.
Cancer of Rectum and Signet Cells. C. Di Gioia.—p. 129.
**Secondary Jejunal Ulcers. S. Gussio.—p. 134. C'cn.*

Secondary Jejunal Ulcers.—Gussio concludes from his experiments that a high gastric resection remains the best means for prophylaxis of secondary jejunal ulcers. The pyloric region may be left if the predisposition is not too grave.

Riforma Medica, Naples

42: 169-192 (Feb. 22) 1926

Syphilitic Diabetes. B. Sparacio.—p. 169.
Meningitis and Ascaridiasis. A. Jona.—p. 172.
Lingual Tonsillitis. A. Della Cioppa.—p. 174.
Tetany and Hypofunction of Suprarenals. R. Silvestrini.—p. 182.

Medicina Contemporanea, Lisbon

43: 369-376, 1925

Mineral Waters of Portugal from Medical Standpoint. Narciso.—p. 369.
*Retrogression of Tumor Under Organotherapy. J. Bacalhau.—p. 371.

Thyroid Treatment of a Mediastinal Tumor.—Bacalhau urges physicians to cooperate in studying the effect of organotherapy on tumors, as few hospitals are able to keep a patient long enough to determine the ultimate outcome. His success in a case described justifies, he says, extensive application of this method of treatment. His patient was a robust working man, aged 54, who in 1923 began to have dyspnea on exertion; cough and hoarseness soon followed, with progressive attacks of suffocation. The symptoms and radiologic findings indicated a tumor in the mediastinum and its growth upward threatened suffocation. The clinical course indicated a benign character, probably a lipoma, but its extension forbade operative intervention. No benefit was realized with treatment for syphilis—the Wassermann test was weakly positive—but Naamé's recent report of the retrogression of two malignant tumors under organotherapy encouraged its application in this case on the assumption of endocrine disturbance and the influence of the thyroid on the metabolism of fat. A testicle extract was given with the thyroid extract, and in five days there was considerable relief, allowing the patient some sleep at night. The tumor continued to retrogress and the man was discharged from the hospital in six weeks, with slight dyspnea on exertion as his only complaint. He takes the tablets only occasionally now, and has resumed his former occupation.

Archiv für klinische Chirurgie, Berlin

139: 245-664 (March 11) 1926

*Enterospasm. H. Steindl.—p. 245.
Anatomy of Biliary Apparatus. H. F. O. Haberland.—p. 319.
*Internal Fistulas. P. Clairmont.—p. 359.
Bleeding Breast. S. Erdheim.—p. 366.
*Postoperative Albuminuria. F. Schulze.—p. 413.
*Serum Proteins in Test Diuresis. C. H. Lasch.—p. 419.
Chronic Osteomyelitis. E. Stahnke.—p. 428.
Perforated Peptic Ulcers. H. Naumann.—p. 434.
*Homoioplasty of Skin. E. Gohrbandt.—p. 471.
Gallstones and Cancer of Biliary Passages. R. Lotzin.—p. 525.
Gastroptosis. V. Orator.—p. 539.
Changes in Ileum with Artificial Anus. H. Angerer.—p. 547.
Topography of the Phrenic Nerve. E. Ruhemann.—p. 557.
Physiology of the Vas Deferens. H. Boeminghaus.—p. 563.
Pseudarthrosis with Dystrophy of Muscles. H. Walter.—p. 574.
*Ileus and Drop in Blood Sugar. A. Kubányi.—p. 581.
Horse-Shoe Kidney. H. Boeminghaus.—p. 589.
Heart with an Arteriovenous Aneurysm. W. Rieder.—p. 597.
Roentgen Treatment of Sarcomas. H. Hueck.—p. 607.
Tabetic Osteo-Arthropathy of the Spine. Breitländer.—p. 616.
Deforming Spondylitis and Arthritis. A. Schanz.—p. 627.

Pathology of Seminal Vesicles. H. Boeminghaus.—p. 641.
Esophagoplasty. G. Axhausen.—p. 645.
"Bone After Wire Extension." Sommer.—*p. 658.* Reply. *Block.—p. 662.*
"Orchidopexy." Corrections.—p. 666.

Spasm in the Gastro-Intestinal Tract.—Steindl found degenerative changes in the medulla and pons, localized especially near the dorsal nucleus of the vagus, in four cases of intestinal spasms (spastic ileus in two of them). Calcium helps in such cases if administered in large doses. Paravertebral anesthesia produces a predominance of the vagus by inhibition of the splanchnic nerve and is therefore not advisable for spastic conditions in abdominal organs.

Internal Fistulas.—Clairmont interposes a well nourished pedunculated flap of subcutaneous fat from the thigh in treatment of vesicorectal or vesicovaginal fistulas.

Postoperative Albuminuria.—Schulze observed transitory albuminuria practically always, together with acetonuria, after surgical interventions made under ether or local anesthesia. He never saw it after intraspinal anesthesia.

Serum Proteins in Test Diuresis.—Lasch determined the fractions of serum proteins in diuresis tests. With good elimination, the total protein level of the serum rose; the globulin fraction declined. With deficient diuresis, either the total protein decreased while the globulins increased, or vice versa.

Homoioplasty of Skin.—Gohrbandt obtained successful transplantations of skin only in young rats of the same litter. He failed in 150 attempts in other animals. Parabiosis did not improve the results.

Ileus and Drop in Blood Sugar.—Kubányi found moderate hypoglycemia in some of his dogs with experimental ileus.

Deutsche medizinische Wochenschrift, Berlin

52: 473-516 (March 19) 1926

*Antagonism and Synergism. H. Führer.—p. 473.
*Syphilis of the Pharynx. Plaut.—p. 475.
Neurolapine and Vaccine Encephalitis. W. F. Winkler.—p. 477.
Acid Food for Infants. H. Vogt.—p. 478.
Climatotherapy of Surgical Tuberculosis. O. Gundermann.—p. 480.
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*Pernicious Anemia. V. Kairiukschtis.—p. 483.
Treatment of Jaundice. M. Rosenberg.—p. 485.
Conservative Treatment of Cholelithiasis. W. Schoendube.—p. 486.
Fruit and Vegetable Regimens. H. Determann.—p. 489.
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Carcinoma of Intestine. H. Strauss.—p. 492.
Treatment of Pulmonary Tuberculosis. Kaminer.—p. 492. C'cn.
Occupational Diseases. Teleky.—p. 497. C'cn.
Physicians in Germany, 1925. Prinzing.—p. 498.

Antagonism and Synergism.—Führer, who as long ago as 1907 regarded tetany as guanidine poisoning, deals with various synergists and antagonists. Calcium is a true antagonist, barium a true synergist of guanidine. Strontium is its synergist in regard to the increased tonus, its antagonist by suppressing the rapid contractions of striped muscles. Dextrose and epinephrine are antagonists of guanidine. Combinations of different drugs may enhance one of the actions and suppress another—for instance, in a combination of amidopyrine with a barbital compound the narcotic action of both disappears while the analgesic effect becomes stronger. Bürgi's rule is evidently not universal.

Syphilis of the Pharynx and Mouth.—Plaut finds that a sudden beginning of the sore throat as well as the absence of fever speak against syphilis. A dental treatment received several weeks before may be an important item in the history of a primary lesion in the mouth. Not only tertiary but also secondary syphilis may cause an ulcerative membranous tonsillitis. He observed such a case in an elderly physician with a supposed panaritium, which was the primary lesion. Before the diagnosis was made, a son of the patient was infected by a kiss. Fusospirillar symbiosis in otitis media is frequently conditioned by syphilis. Absence of swelling of lymph nodes testifies against syphilis. Absence of fusiform bacilli and of spirochetes with a clinical picture of the Plaut-Vincent angina makes the diagnosis of tertiary syphilis probable.

Pernicious Anemia.—Kairiukschtis injected rabbits with an emulsion of bone marrow obtained at necropsies of pernicious anemia patients. The rabbits died under grave local and general symptoms. He believes that he found megaloblasts in the blood of some of them. His controls were all practically negative.

Klinische Wochenschrift, Berlin

5: 489-536 (March 19) 1926

*Seasickness and the Sense of Balance. H. Abels.—p. 489.
Clinical Research on Variations. H. Rautmann.—p. 493. C'td.
Fibrous Osteitis, Osteomalacia and Rickets. G. Schmorl.—p. 496.
*Lactacidemia in Cancer. H. Schumacher.—p. 497.
*Spirochetoses. G. Steiner and J. Steinfeld.—p. 499.
*Starvation Treatment of Epilepsy. P. Karger.—p. 502.
*Etiology of Nevi. Meirowsky.—p. 505.
*Cholesterol and Growth of Hair. R. Jaffé.—p. 507.
Pollen Content of Air. R. Wigand.—p. 508.
Current for Roentgen Work. M. Jona.—p. 509.
Trachoma. C. Pascheff.—p. 510.
*Liver Function Test.—p. 510.
Cochlear Reflexes. E. A. Spiegel and T. Kakeshita.—p. 510.
Schick Test in Diphtheria Bacilli Carriers. H. Meyer.—p. 510.
Fatal Poisoning with Oil of Chenopodium. A. Esser.—p. 511.
Amebic Dysentery. W. H. Lamberts.—p. 513.
Vocational Guidance. K. Brockmann-Rohne.—p. 517.

Seasickness and the Sense of Balance.—Abels analyzes the pathogenesis of seasickness. The unaccustomed tactile and kinesthetic stimuli, and especially those originating in the vestibular apparatus, are responsible. The novel nature, the long duration and the exogenous origin of these stimuli are of importance. The phenomena of seasickness are aggravated by any effort to perform complicated movements. Persons who have become immune to seasickness on one boat may get seasick on a boat of different construction.

Lactacidemia in Cancer.—Schumacher found an increased lactic acid concentration in the blood (22-34 mg. per hundred cubic centimeters) of those carcinoma patients who had metastases in the liver. The other patients had normal amounts (9-15 mg.).

Spirochetoses.—Steiner and Steinfeld obtained superinfections in animals that had been mildly infected with recurrent fever. Later on, it proved possible to cultivate reinjected spirochetes from the blood without any other signs of reinfection becoming manifest. The immunity may be increased for a few weeks by reinjection of virulent material.

Starvation Treatment for Epilepsy.—Karger had only a few fair results in treatment of epilepsy in children by starvation. He would reserve this treatment exclusively for cases of impending status epilepticus. An acidotic diet (meat, cream, eggs) was also effectual in a few instances. When he added a little sugar to the water allowed to the fasting children, the acetonuria disappeared and the seizures returned.

Etiology of Nevus.—Meirowsky surveys the evidence of the idiotypical conditioning of nevi.

Cholesterol and Growth of Hair.—Jaffé accelerated the growth of hair in rabbits by local application of ointments containing cholesterol. He explains the similar results obtained with tar by its action on the sebaceous glands. Administration of cholesterol by the mouth produced no results.

Liver Function Test.—A communication from the Merck establishment points out that only phenoltetrachlorphthalein (or its sodium salt) is suitable for the liver function test made by estimation of its disappearance from the serum. Tetrachlorphenolphthalein has not a sufficiently deep color.

Medizinische Klinik, Berlin

22: 397-436 (March 12) 1926

Vital Stimuli and Nerves. F. Glaser.—p. 397.
Conservative Treatment in Gynecology. Benthin.—p. 401.
*Necrosis After Benzene Occupational Poisoning. J. Löwy.—p. 404.
*Sclerosis of Portal Vein. W. Lehmann.—p. 405.
*Rupture of the Cardia by a Dilator. V. Maydl.—p. 408.
*Typhoid Bacilli Carriers. E. Bersch.—p. 409.
Treatment of Uterine Hemorrhages. F. Benzel.—p. 413.
Oxychromatic Changes of Nuclei. A. Luger and E. Lauda.—p. 415. C'td.
Tuberculosis and Occupational Disease. v. Schnizer.—p. 417.
Results of Neurologic Treatment. T. Cohn.—p. 420.
Survey on Infectious Diseases. H. Ziemann.—p. 422.
Social Medicine. R. Ziel.—p. 433.

Necrosis of Jaw After Occupational Benzene Poisoning.—Löwy's patient died of sepsis following necrosis of the upper jaw. He had been working in a tire factory with benzene and other material. Leukopenia with relative lymphocytosis and anemia were present. An acute benzene poisoning causes fever and a leukocytosis with prevalence of polymorphonuclears.

Sclerosis of Portal Vein.—Lehmann reports the history of a case of two years' duration. Symptoms of Banti disease with repeated hematemesis speak for a sclerosis of the portal vein. No urobilin was found in the urine of the patient.

Rupture of the Cardia by a Dilator.—After having had perfect results with Starck's method of brusque dilation of the cardia in seven cases, Maydl reports a death due to rupture of the cardia during the procedure. The force applied in this patient had been less than in some of the successful cases.

Typhoid Bacilli Carriers.—Bersch removed the gallbladder containing calculi in five typhoid bacilli carriers. No elimination of typhoid bacilli has been observed since.

Münchener medizinische Wochenschrift, Munich

73: 433-474 (March 12) 1926

Twenty-Five Years of Uhlenhuth's Blood Test. G. Hauser.—p. 433.
Chronic Arthritis. W. Alwens.—p. 434. C'td.
Spirochetes in Malaria-Treated Paresis. J. Gerstmann.—p. 436.
Oligodynamic Action and Homeopathy. A. Buschke et al.—p. 437.
*Influencing the Soil in Infections. H. Finkelstein.—p. 439.
Roentgen Treatment of Hyperthyroidism. Sielmann.—p. 439.
Alimentary Leukopenia in Cancer. K. Rausche.—p. 441.
Sanocrysin Treatment H. Jessen—p. 444.
Uric-Acid Treatment of Tuberculosis. G. Padel.—p. 444.
Dislocation of the Mandible C. Hörhammer.—p. 446.
"Medicolegal Obstetrics." VIII. M. Hofmeier.—p. 447.
Goniometer for Research on the Constitution. Mandelstamm.—p. 448.
Nephritis C. R. Schlayer—p. 449.
*Overburdening of School Children. G. Junge.—p. 452.
*Protection of Infants and Mothers in Russia. A. Dworetzky.—p. 463.

Influencing the Soil in Infections.—Finkelstein shows that successful attempts to influence infections by modifying the tissues by the diet were made long ago by pediatricians. A diet poor in salt dries the secretion in weeping eczema.

Overburdening of School Children.—Junge pleads against overburdening the children in the schools. No physician is ever asked for his advice when a change of curriculum is contemplated. Each branch of instruction tries to increase the allotted time. Recently the music teachers succeeded in forcing singing lessons on preparatory school (gymnasium) students who are as old as Leibniz was at the time of his refusal of a position as professor. And attendance at the singing lessons is compulsory, without regard to the students' musical inclinations.

Protection of Infants and Mothers in Russia.—According to Dworetzky, the new organization of the welfare work for infants and mothers has reduced infant mortality to one half the previous figure. In the Moscow province it was as high as 27.6 per cent in 1913, and was only 13.7 per cent in 1923 in infants under one year of age.

Wiener klinische Wochenschrift, Vienna

39: 293-320 (March 11) 1926

*Calmette's Vaccination. E. Löwenstein.—p. 293.
*Contagiousness of Erysipelas. F. Redlich and H. Krasso.—p. 294.
*Hysterectomy and the Artificial Menopause. L. Kraul.—p. 297.
*"Surgically Incurable" Gastric Ulcer. H. Finsterer.—p. 300.
*Pulsation of Abdominal Aorta. E. Pick.—p. 303.
*Angina Pectoris. L. Braun.—p. 304. C'cn.
"Pregl's Kidney Function Test." F. Ody.—p. 305.
*Best Time for Cataract Operation. M. Sachs.—p. 306.
Cancer in Mouth. H. Pichler.—p. 307.
Nervous Diseases of the Stomach. L. Hess. Supplement.—pp. 1-20.

Calmette's Vaccination.—Löwenstein criticizes Calmette's method. The immunity the latter claims to have obtained was limited to administration of virulent tubercle bacilli by mouth, not by injection. Yet many of even these animals died of tuberculosis, and there was no evidence as to whether the germs contained in their tubercles were due to the vaccination or to reinfection. A germ which is not virulent for guinea-pigs may be gravely pathogenic for man. Löwenstein had demonstrated that infection of guinea-pigs by feeding with virulent tubercle bacilli requires six months to two years to develop. Therefore the preliminary good results in children are not convincing. The virulence of the ingested germs may increase, especially in the young.

Contagiousness of Erysipelas.—Redlich and Krasso report several instances of infection of other patients from erysipelas patients transferred to the internal clinic. They consider complete isolation necessary.

Effect of Hysterectomy and of the Artificial Menopause.—Kraul investigated the disturbances in 252 cases of removal of the uterus and ovary or roentgen sterilization. The extirpation of the uterus alone caused no symptoms of Aschner's "dyscrasia," especially no hypertension. Extirpation of the adnexa or roentgen sterilization caused graver disturbances than the natural menopause. Transitory hypertension is often associated with myoma.

"Surgically Incurable" Gastric Ulcer.—Finsterer objects to this term. He found that recurrences of jejunal ulcers are due to the Y shape of the anastomosis and to insufficient resection of the stomach. A good resection should remove the whole lesser curvature and the larger part of the greater curvature. This means removal of two-thirds of a normal stomach, and more of a dilated organ. The alleged jejunal ulcers with anacidity would disappear from the reports if the gastric secretion were examined two hours after a regular meal, instead of twenty minutes after the Ewald meal.

Pulsation of Abdominal Aorta.—Pick confirms the probability of functional disturbances with strong pulsation of the abdominal aorta. The continual irritation of its surroundings may cause gastric distress, simulating an ulcer.

Angina Pectoris.—Braun reviews critically the history of the syndrome. It is a remarkable fact that Edward Jenner was the first to point to a sclerosis of the coronary arteries, and refrained from publishing his observation from consideration for John Hunter who had just presented the first signs of angina pectoris. The pain is of a peculiar nature; no matter how great any other pain may be—as for instance in trigeminal neuralgia—it always remains outside of the mind. It never breaks into the innermost personality of the sufferer, as true angina pectoris does. The patient may try to control any other pain: he may cry or scream, but he has not the feeling of being completely overcome—absolutely passive—such as the patient experiences during the attack of angina pectoris. The latter is actually an uncanny sensation of impending dissolution. This distress is the most important feature of the attack, and may be the only one. Attacks occurring without any pain are especially dangerous. A neurotic person may describe the distress; a sufferer from angina pectoris lives it. If the neurotic begins to suffer from real angina pectoris, he drops the theatrical description and presents his report with restraint and dignity. At necropsy in his 127 cases, the lumen of the left coronary artery was always found more or less obliterated.

Best Time for Cataract Operation.—Sachs deals with the question when to operate for cataracts. The intervention is never urgent, and therefore a good preparation for it is possible. Any conjunctivitis endangers the outcome. The lacrimal apparatus must be taken care of—eventually by extirpation of the sac. Cough from a catarrhal affection of the respiratory tract may rupture the wound. Codein is advisable in the catarrh of smokers. The "expulsive hemorrhage" sometimes following the opening of the eyeball in arteriosclerotic subjects with hypertension, may be prevented by bromides and copious venesection. Maturity of the cataract is not essential for its removal. The indication for it is given rather by the condition of the other eye. If the latter is good, the patient can wait till the cataract is ripe. Conservative treatment—except with diabetic cataract—has always failed so far. Römer had tried in 1906 a preparation obtained from animals' lenses, and later withdrew his originally optimistic claims. Another similar method ("phacolysis") has been recommended in recent years but the alleged favorable results were not confirmed at Dimmer's clinic. The reason for the alleged success is the slowness of the process. In 95 per cent of the patients the beginning cataract remains almost stationary for years. No wonder then that arrest of the process in 95 per cent of the cases is claimed.

39: 321-348 (March 18) 1926

*Pathogenesis and Treatment of Myopia. L. Müller.—p. 321.
*Caronia's Cultures. J. Takaki.—p. 325.
*The Goiter Question. A. v. Mezö.—p. 326.

Rupture of the Bladder. A. Brenner.—p. 328.
Dispensary for Psychotherapy. H. Kogerer.—p. 330.
*Treatment of Obesity. D. Bayor.—p. 333.
The Vienna Laryngologic Society. *H. Marschik.*—p. 334. C'td.
Iridocyclitis and Tuberculosis. J. Meller.—p. 336.
Immunity and Allergy in Syphilis. H. Planner. Supplement, pp. 1-20.

Pathogenesis and Treatment of Myopia.—Müller started by investigating the reason why myopia starts usually after the ninth year and ends after the twenty-first. He found thirteen years ago by examination of 350 boys that the divergence of the visual axes is not a sequel of myopia. Quite the contrary, the myopes are recruited from the children with this divergence. He also concluded at that time that this is due to traction by the oblique muscle, not to a predominance of the external over the internal rectus muscle. He came to the conclusion that the elongation of the axis of the eye is not the primary lesion, but that it is produced by some processes connected with the growth of the orbit and the function of the oblique muscles of the eye. If the elastic band connecting the trochlea with the insertion of the obliquus superior, and serving also as a check band for the inferior muscle, is stretched by convergence of the eyeballs, the sclerotic is stretched and gets thinner exactly in the places typical for myopia. He severed the obliquus muscle in twenty-five eyes of twenty-one patients with grave myopia. The motor loss from the operation is negligible. The eyeball sinks about 3 mm. deeper. The myopia improved by 3-6 diopters. The changes in the choroid and retina retrogressed, the central visual acuity increased considerably. He has reason to assume that the operation may prevent detachment of the retina, and that it is essential for a cure. He intends to loosen the trochlear cartilage in children with beginning myopia. A retroposition of this kind would be a minimal intervention, and the possible benefit is great.

Caronia's Cultures.—Takaki was unable to confirm any of Caronia's claims. The alleged micro-organisms are probably a result of autolytic processes of the added pieces of organs. They gave nonspecific results when used as antigens in complement fixation tests with scarlet fever and measles convalescent serum. As to the protective value, he points to Hektoen's experiments which demonstrated the infectiosity of minimal amounts of blood taken from measles patients. The amount of original blood present in the cultures might be sufficient to immunize.

The Goiter Question.—Mezö grafted a piece of parenchymatous goiter from a boy with hyperthyroid symptoms under the oblique muscle of a girl suffering from dyspnea due to a large goiter. The goiter disappeared within four weeks.

Treatment of Obesity.—Bayor confirms Eppinger's results in treatment of obesity with novasurol. Short (seven) hours of sleep, exercises and dieting are also necessary. The salt intake should be restricted during the treatment.

Zentralblatt für Chirurgie, Leipzig

53: 577-640 (March 6) 1926

Total Extirpation of the Stomach. E. Schwarz.—p. 578.
Plastic Surgery of Fingers. E. Mühsam.—p. 585.
*Suprapubic Prostatectomy. D. Maluschew.—p. 589.
Kirschner's Suture of Bones. H. Schum.—p. 590.
Modification of Billroth II. S. Cukor.—p. 593.
Förster's Operation. O. Orth.—p. 598.
Material for Drains. S. Sofoteroff.—p. 601.
"Casts." H. Magnus.—p. 605.

Suprapubic Prostatectomy.—Maluschew makes a preliminary cystopexy together with vasectomy. Fourteen days later he performs the suprapubic prostatectomy with primary suture of the bladder.

53: 641-704 (March 13) 1926

*Prolapse of the Liver in Umbilical Hernia. K. Vogeler.—p. 642.
Wire Suture of Bone. M. Borchardt.—p. 647.
*The Fabella. H. Simon.—p. 650.
Traumatic Thrombosis. C. Prima.—p. 651.
Appendicitis Causing Incarcerated Hernia. J. Csillag.—p. 653.
Doubling the Aponeurosis. L. P. Mariantschik.—p. 656.
Herniotomy. G. M. Gurewitsch.—p. 661.

Prolapse of Liver in Umbilical Hernia.—Vogeler draws a sharp line between congenital hernias of the umbilical cord according to their contents. Only two survived out of ten children with prolapse of the liver, treated at Bier's clinic. The reposition of the liver increases the abdominal pressure and interferes with breathing and the action of the heart. He advises to resect or to ligate the part which cannot easily be pushed back into the abdominal cavity.

Fabella.—Simon declined to remove an alleged loose body in the knee which he diagnosed as a fabella: namely, a sesamoid fibrocartilage or calcified nodule in the lateral head of the gastrocnemius muscle.

Zentralblatt für Gynäkologie, Leipzig

50: 641-704 (March 13) 1926

Tuberculosis of Cervix. H. R. Schmidt.—p. 642.
*Vaginal Reaction in the New-Born. H. Kienlin.—p. 644.
Transverse Sagittal Suture Presentation. R. Brühl.—p. 646.
Forceps in Rural Practice. T. Johannsen.—p. 654.
Small Doses of Pituitary Extract. H. Hoeland.—p. 662.
Hemorrhage from Corpus Luteum. H. Hellendall.—p. 666.
Hormones and Lactation. H. Alexander.—p. 669.
*Blood Requirement of Ovarian Cystoma. C. H. Engelbrecht.—p. 671.
*Abortion in Uterus Septus. R. Falk.—p. 673.
Theory to Explain Menstruation. R. Grósz.—p. 676.
A Calculus in the Ovary. H. Jentter.—p. 678.
"Clips in Suture of Perineum." P. Siiin.—p. 682.

Vaginal Reaction in the New-Born.—Kienlin found lactic acid in the vagina of new-born girls before any bacteria had time to develop. He concludes that it originates probably by fermentative action of the tissue itself.

Blood Requirement of Ovarian Cystoma.—Engelbrecht removed a carcinomatous cystoma, weighing 14 pounds, which had rapidly grown in four weeks. The fluid expressed from it contained enough iron to correspond to 5,600 cc. of blood.

Abortion in Uterus Septus.—Falk made with apparent success an artificial abortion in the second month of pregnancy in a woman with grave heart disease. She returned three months later with the uterus corresponding to the fifth month of pregnancy. This was due to another ovum situated in the other half of a double uterus with single cervix.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 741-832 (Feb. 20) 1926

*The Netherlands Pharmacopeia. *H. Pinkhof.*—p. 742.
*Radium Treatment of Cancer of the Esophagus. W. F. *Wassink.—p. 746.*
*Swine Erysipelas Pathogenic for Man. C. Postma.—p. 754.
*Air Embolism with Criminal Abortion. J. P. L. Hulst.—p. 759.
A Spontaneous Hematoma in Abdominal Wall. P. Broertjes.—p. 768.

The Netherlands Pharmacopeia.—The fifth edition is now in press. Among the sixty-three new articles listed are glycerol suppositories, folia colei, crystallized strophanthin, and cinchophen. Among the same number dropped are croton oil and unguentum hydrargyri fortius. Pinkhof lists a number which should be dropped, and protests against the dropping of malaga wine. On account of the variable composition or proprietary ownership, ichthyol and arsphenamine are omitted, and the only organ extract given is thyroid.

Radium Treatment of Cancer of the Esophagus.—Wassink remarks that we can always be certain that conditions are worse than they appear to be in cancer of the esophagus. In nineteen of his forty-one cases the outlook seemed to be favorable, but all have died since except two; one of these, a man aged 67, is in excellent health two years and a half since the radium treatment. He had noted the first symptoms about six months before treatment was begun. Even merely palliative radium treatment long postpones a gastric fistula.

Swine Erysipelas in Man.—Postma cites Praussnitz' recent case in which a child, aged 10, died from chronic septicemia which responded to tests for swine erysipelas. This disease occurs in other domestic animals and in poultry, and it is possible that certain cases of chronic arthritis in man may be due to the same bacillus. It should be sought during the acute phase of joint disease. Edel urges search for it in cases of enteritis during an epizootic. In 164 cases of swine erysipelas in a light form, Postma found the bacilli in the meat in 66 per cent, but they were all killed by heat; pieces of meat weighing 800-1,800 Gm., and 5-15 cm. thick, were sterilized by heat applied for an hour, even when the central temperature had not reached 90 C.

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CONSERVATIVE THERAPEUTICS *

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Notwithstanding the advance in medical science and the great improvement in medical education during the last twenty years, it is obvious that from the standpoint of the general public medical practice is not satisfactory. During the last few years, heated and conflicting criticisms of medical education by those in positions of authority have been factors in the formation of a commission on medical education to make a thorough survey of present requirements of medical practice. A not inconsiderable number of the people, including many otherwise intelligent persons, because of dissatisfaction with medical practice, go to the so-called cults, seeking relief from physical and mental difficulties.

In 1834, in a discourse on quackery, Dr. Zadok Howe pointed out the danger of the irregular practitioners whose energy at this time was devoted largely to the sale of "patent" vegetable remedies. He made interesting suggestions to check this evil, such as the diffusion of special education by the organization of lay societies, and opportunities for chemical examination of these remedies with reports of results. Such ideas carried out by the Council on Pharmacy and Chemistry, the publication *Hygeia* of the American Medical Association, and the work of the American Association for Medical Progress would seem to be carrying forward Dr. Howe's suggestions.

Even at this time, almost a hundred years later, the enormous advance in scientific medicine, with the remarkable development of surgical procedures and the discovery and application of methods of utmost importance in preventive medicine and public health, has led to neglect in medical teaching and practice of certain very valuable therapeutic aids. It has also created an intensive urge for the discovery of specifics and the premature announcement of amazing and false cures, by even the most prominent foreign and American university clinics.

Several years ago while I was in Europe making a urvey of cancer research with particular reference to he application of radioactive substances, a study of [illegible] literature supplied from well known university nics could with the greatest difficulty be differentiated [illegible] the advertisements of the most blatant quacks. his country, also, a glance backward reveals the ing and unwarranted publicity permitted even by university administrators announcing cures for various diseases, notably certain types of anemia, and infection, and particularly cancer. In some instances this has doubtless been due to the urge for funds that such publicity may supply, coupled with a feeling that the end justifies the means. In other instances, however, *it is surprising how uncritical prominent educators and* even learned chemists and physicists may be when dealing with biologic material; and when the added psychologic factor of the human being is introduced, the situation is even more confusing.

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Surgery will discover new methods, and pharmacology and immunology will assist in placing medicine on a more rational scientific basis; but there are to my mind two serious defects in our medical education and medical practice which have been potent factors in the development of the so-called cults—the neglect of the proper instruction and use of physical therapy, and the consideration and general application of psychiatry.

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irman's address, read before the Section on Pharmacology and [illegible] at the Seventy-Seventh Annual Session of the American Association, Dallas, Texas, April, 1926.

Air Embolism with Criminal Abortion.—Hulst relates that in one of the two cases he describes death occurred instantaneously after the first symptoms of air embolism, but eighteen hours had elapsed since the intra-uterine injection of a warm fluid, responsible for it. No air was found in the fetal membranes but there was air between the uterus wall and the ovum (twenty-three weeks) which had been partially detached. In the other case, the broken tip of the syringe cannula had pierced the right wall of the vagina, and air had been injected directly into some injured blood vessel. Death was instantaneous, and air was found in the heart.

1: 833-932 (Feb. 27) 1926

The Medical School in Java. G. van Rijnberk.—p. 834.
*Psoriasis After Neo-Arsphenamine Treatment. Van der Hoog.—p. 838.
*Hour-Glass Stomach. J. J. Halbertsma, Jr.—p. 845.
Embryologic Study of Form Properties. S. T. Bok.—p. 850.
*Safe Cans for Food. E. C. van Leersum.—p. 859.
Multiple Pathologic Conditions in a New-Born Infant. Van Lohuizen.—p. 865.
Pluri-Orificial Erosive Ectodermosis in a Woman. J. J. C. Schreuder.—p. 874.
International Cooperation in Medicine. F. H. Quix.—p. 898.

Psoriasis After Neo-Arsphenamine Treatment.—The young woman developed an arsenical erythroderma after a total of 5 Gm. of neo-arsphenamine had been injected, and psoriasis developed on this basis. After acute bilateral parotitis about a month later, the psoriasis subsided in a few weeks. It had responded to all the tests for true psoriasis.

Hour-Glass Stomach.—The woman of 51 had had more or less stomach disturbances for twenty years, with two temporarily successful courses of medical treatment for gastric ulcer. The pains finally became unendurable, with a hemorrhagic tendency, and the laparotomy revealed an hour-glass stomach with an ulcer that had invaded the pancreas, another ulcer at the pylorus, and a duodenal ulcer. After the extensive resection required, the woman gained 12.5 Kg. in weight, and has been free from all stomach disturbances during the eight months to date.

Canned Goods.—Van Leersum describes the exhaustive tests applied to a consignment of a canned food, a hash, including onions and potatoes, put up six years before. His expert testimony was to the effect that this canned food was suitable for the table. In the course of his research he became convinced that the indispensable element for conservation of foods in cans is to exhaust all the air from the can as it is sealed. The oxygen is responsible for any corrosion that occurs.

Acta Chirurgica Scandinavica, Stockholm

60: 1-192 (March 10) 1926

*Ruptures of Tendons. E. J. Narvi.—p. 1.
Treatment of Appendicitis. P. Clairmont and M. Meyer—p. 55.
Intrathoracic Goiter. O. Aleman.—p. 135.
*Gastric Disturbances in Tetany. F. Langenskiöld.—p. 143.
Intradural Tumors. E. Landelius.—p. 180.

Regeneration of Tendon After Suture.—Närvi found in his experiments that the ends of the severed tendon remain passive. The granulation tissue grows along the sutures and changes later into a hard tendon-like tissue. It is essential to preserve the tendon sheath to facilitate the gliding movements. Immobilization is irrational.

Gastric Disturbances with Tetany.—Langenskiöld reports on six cases of tetany in young and middle aged women with a predominance of gastric symptoms. Attacks of sharp pains beginning during the meal and vomiting were the usual features, which he attributes to intestinal spasms. Calcium had a good effect.

Hygiea, Stockholm

88: 65-112 (Jan. 31) 1926

*Larynx Test for Tubercle Bacilli. H. Silwer and W. Rasch.—p. 65.
*Training in Medical Radiology. G. Forssell.—p. 73. C'cn.

The Larynx Test for Tubercle Bacilli.—Silwer and Rasch report that they were able to demonstrate tubercle bacilli in the secretion taken directly from the larynx in 17.4 per cent of 219 patients whose sputum was free from tubercle bacilli, or from whom no sputum was obtainable.

Training in Medical Radiology.—This was the opening address at the recent annual meeting of the radiologists of the Northland. Forssell in conclusion lists the opportunities throughout the world for instruction in this line.

88: 145-192 (Feb. 28) 1926

Neo Platonism and Medicine. E. Nachmanson.—p. 145.
*Surgical Treatment of Splenomegaly. A. Troell.—p. 157. Begun, p. 116.

Operative Treatment of Splenomegaly.—Troell states that the effect of splenectomy was satisfactory, both at the time and later, in most of his fourteen cases of Banti's disease, hemolytic jaundice or essential thrombopenia. Even Banti cases with urobilinuria, ascites and histologic changes in the liver may retrogress to clinical recovery. The prognosis does not depend on the stage of the process so much as on the grave anemia, even in recent cases; the outlook is better when the symptoms are referable more to the abdominal organs than to the blood picture. One of his eight Banti patients recovered after ligation of some of the vessels of the spleen, without removing the latter. This intervention should be considered when it is inadvisable to reduce the defensive forces as splenectomy might contribute to lower the resisting powers. One patient died during an attack of influenza a year after the splenectomy for Banti's disease, and, besides red bone marrow in the femur, all the cervical and abdominal glands were found enlarged. In the Banti cases he often found a history of jaundice and gastro-intestinal disturbances far in the past occasionally, the symptoms had developed first during a pregnancy. One of the two patients with pernicious anemia was treated by ligation of vessels, but this did not check the disease.

Ugeskrift for Læger, Copenhagen

88: 149-174 (Feb. 18) 1926

*Treatment of Diphtheria, 1921-1925. H. Heckscher.—p. 149. C'cn, p. 187.
Cancer of the Uterus. H Abrahamsen.—p. 159.
Pergola's Culture Medium for Diphtheria Bacilli. Nyfeldt.—p. 165.

Treatment of Diphtheria.—Heckscher's article is the third report on diphtheria from the Blegdamshospital in the last twenty-eight years. In the last nearly five years the mortality from diphtheria was 1.2 per cent of 4,819 cases. Circulatory insufficiency—diphtheria shock—was responsible for the fatality in all but five of the sixty-six deaths; paralysis of the respiratory muscles in four cases, and fatal toxic action on the liver and kidneys in one case. The rule is as large doses of antitoxin as possible, as early as possible, absolute quiet, camphor subcutaneously and caffein by the mouth. Further study of diphtheria shock may disclose means to act on the capillaries, arterioles or heart musculature, and show whether epinephrine might not help. To prevent serum sickness, injection of nonspecific proteins seems promising. Better results can be hoped for when the antitoxin is made more potent in smaller compass, so that larger doses can be given.

88: 175-208 (Feb. 25) 1926

*Results of Sanocrysin Treatment. K. Secher.—p. 175.
*Biologic Analysis of Digitalis Substances. Marie Krogh.—p. 183.
Small Doses of Metal Salts in Therapeutics. N. Lunde.—p. 191.
Glaucoma and Blindness in Iceland. P. Børresen.—p. 194.

Sanocrysin Treatment.—Secher reports 106 patients with various forms of tuberculosis free from all signs of active tuberculosis when dismissed from treatment; thirty-five were merely improved, and forty-six not benefited.

Biologic Analysis of the Active Principles of Digitalis.—Some of these substances are soluble in chloroform, others in alcohol, and the question is whether there is a similar difference between their biologic action. Krogh tabulates the findings in mice and frogs which have demonstrated a pronounced qualitative difference. The gitalin glucoside displays greater potency in mice. With a solution of gitalin and one of digitalin, both of which display the same potency in the frog heart, the gitalin solution has a threefold stronger action on the mouse heart. Similar qualitative differences are noted with the less readily soluble element digitoxin. The research reported is a link in the chain of the international standardization research now under way.

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CONSERVATIVE THERAPEUTICS *

THOMAS ORDWAY, M.D.
ALBANY, N. Y.

Notwithstanding the advance in medical science and the great improvement in medical education during the last twenty years, it is obvious that from the standpoint of the general public medical practice is not satisfactory. During the last few years, heated and conflicting criticisms of medical education by those in positions of authority have been factors in the formation of a commission on medical education to make a thorough survey of present requirements of medical practice. A not inconsiderable number of the people, including many otherwise intelligent persons, because of dissatisfaction with medical practice, go to the so-called cults, seeking relief from physical and mental difficulties.

In 1834, in a discourse on quackery, Dr. Zadok Howe pointed out the danger of the irregular practitioners whose energy at this time was devoted largely to the sale of "patent" vegetable remedies. He made interesting suggestions to check this evil, such as the diffusion of special education by the organization of lay societies, and opportunities for chemical examination of these remedies with reports of results. Such ideas carried out by the Council on Pharmacy and Chemistry, the publication *Hygeia* of the American Medical Association, and the work of the American Association for Medical Progress would seem to be carrying forward Dr. Howe's suggestions.

Even at this time, almost a hundred years later, the enormous advance in scientific medicine, with the remarkable development of surgical procedures and the discovery and application of methods of utmost importance in preventive medicine and public health, has led to neglect in medical teaching and practice of certain very valuable therapeutic aids. It has also created an intensive urge for the discovery of specifics and the premature announcement of amazing and false cures, by even the most prominent foreign and American university clinics.

Several years ago while I was in Europe making a survey of cancer research with particular reference to the application of radioactive substances, a study of official literature supplied from well known university clinics could with the greatest difficulty be differentiated from the advertisements of the most blatant quacks. In this country, also, a glance backward reveals the amazing and unwarranted publicity permitted even by university administrators announcing cures for various diseases, notably certain types of anemia, and infection, and particularly cancer. In some instances this has doubtless been due to the urge for funds that such publicity may supply, coupled with a feeling that the end justifies the means. In other instances, however, it is surprising how uncritical prominent educators and even learned chemists and physicists may be when dealing with biologic material; and when the added psychologic factor of the human being is introduced, the situation is even more confusing.

The American Medical Association sends the graduating class of medical students each year a code of personal ethics, "The Principles of Medical Ethics," a minimal standard which we believe necessary if medicine is to be regarded as a profession. Because of the far-reaching example and grave dangers of unwarranted claims and premature publicity just referred to, a code of ethics for our institutions would not seem out of place. How can we combat similar methods among the cults and irregular practitioners when such occurrences are only too common? In this connection I would commend the Lettsomian Lectures of Dr. E. F. Buzzard, recently published in the *Lancet*.

Conditions would be greatly helped if all practitioners and investigators established an ethical basis of procedure which required minimal criteria for diagnosis and treatment. Furthermore, in the treatment of every case we should constantly emphasize the dictum of Hippocrates that "the aim of the physician should be to do good to his patient, or, at least, to do no harm." If this is not true, what is the object of the practice of medicine? For if we regard our work as a profession, our purpose is not merely to strive for anatomic correction of defects, but to try to aid our patients in effective living.

Surgery will discover new methods, and pharmacology and immunology will assist in placing medicine on a more rational scientific basis; but there are to my mind two serious defects in our medical education and medical practice which have been potent factors in the development of the so-called cults—the neglect of the proper instruction and use of physical therapy, and the consideration and general application of psychiatry.

As physicians and investigators, we have not been foremost in acquiring the knowledge and in making suitable application of physical agents, but have left this for the most part to be developed by others. Indeed, in this subject, also, as is largely the case with drugs, vaccines and serums, the postgraduate education of practitioners has been taken over by uncritical commercial houses. Fortunately, a council on physical therapy has been formed during the past year by the

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* Chairman's address, read before the Section on Pharmacology and Therapeutics at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

American Medical Association. The personnel of this council is a guarantee that we shall have the same conservative and critical judgment in matters relating to physical therapy that has been of such great value as a result of the work of the Council on Pharmacy and Chemistry.

Nervous and mental conditions as a cause of disability are so common and manifest themselves under such varied physical disguises as frequently to elude the practitioner without special psychiatric training and interest. Indeed, we might add that almost every case of disease has a mental as well as a physical aspect, just as every human being has a mind as well as a body.

This idea of the interrelation of the physical and mental is expressed in the dialogue of Plato. It may be described as "mens sana in corpore sano." Jowett notes that "the Greek ideal of beauty and goodness, the vision of the fair soul in the fair body, is realized in the beautiful Charmides, and that the true conception of medicine is as a science of the whole, as well as the parts, and of the mind as well as the body: which is playfully intimated in the story of the Thracean: 'I daresay that you may have heard eminent physicians say to a patient who comes to them with bad eyes that they cannot cure his eyes by themselves, but that if his eyes are to be cured, his head must be treated; and then again they say that to think of curing the head alone, and not the rest of the body also, is the height of folly, and arguing in this way they apply their methods to the whole body, and try to treat and heal the whole and the part together.'"

A lack of the practical knowledge of applied psychiatry has caused many to claim good results by the most diverse types of treatment in similar pathologic conditions. It would surprise many of the searchers for hypothetic, or microscopic, foci of infection, or the advocates of specific measures in certain types of arterial hypertension, to realize how many of those and other diverse complaints are relieved by encouragement and reassurance, and by rest, fresh air, suitable food, adequate elimination and reeducation. Howk has recently emphasized the value of the treatment of heart cases in sanatoriums intended for the care of the tuberculous. I would heartily indorse his views and would add that opportunity for such care might properly be extended to those suffering from various other chronic physical as well as nervous conditions. Reeducation, particularly relating to environmental and vocational readjustment, is of the greatest importance in medicine and is frequenely lost sight of in the heedless application of so-called specifics.

In considering the value of any therapeutic agent, it is obvious that we should have precise knowledge of the diagnosis and of the natural history of the difficulty; for proper diagnosis and therapeusis we should therefore set for ourselves minimal criteria. In an attempt to determine the value of certain physical agents, such as radium and the roentgen ray, I have already advocated and employed definite minimal criteria. Only in this way can we secure reliable data for critical analysis to determine the real therapeutic value of these agents. Those who have had extensive experience with cancer realize that the chief difficulty with educational programs which have been of such value in tuberculosis is the paucity of facts at our disposal. In the case of tuberculosis, knowing certain definite and essential facts about etiology and pathogenesis of the disease, even though no specific cure has been found, the incidence and mortality has been greatly reduced by suitable education, early diagnosis, and attention to the cardinal principles of treatment referred to above. The records of life insurance companies are a fertile source of facts regarding the course of certain diseases, and a careful following of their preferred risks should add many additional facts.

We need a detailed knowledge of the natural history of many disorders; and unless we have such definite information as a basis for comparison, it is very difficult to judge the value of various therapeutic procedures. Of the incidence and course of less definite diseases we know very little; but a system of disability reports, carefully checked up in industrial plants and in private practice, should give us "controls," which are so important in therapeutics. This is particularly emphasized in the case of the common colds, about the etiology and therapy of which there is so much doubt, in spite of the assertions of all sorts of specific cures. Such knowledge should be of great help in lessening the incidence and mortality of pneumonia. I have modified and simplified a report blank used by the United States Public Health Service so that it may serve for a simple system of reporting the incidence and course of general as well as special disabilities.

Clinical therapeutic research should be an intensive search for the truth, with adequate controls as indicated above, because of the variability of the factors dealt with. In this connection it would be well if all could read again that outstanding address on self limited diseases by Dr. Jacob Bigelow before the Massachusetts Medical Society, May 27, 1835. In his concluding remarks, Dr. Bigelow states that if at times we seem to "accomplish comparatively little in the actual direction of the disease, the necessity becomes more imperative that we should do that little wisely and well. The importance and usefulness of the medical profession, instead of being diminished, will always be elevated exactly in proportion as it understands itself, weighs justly its own powers, and professes simply what it can accomplish. It is no derogation from the importance of our art that we cannot always control the events of life and death, or even of health and sickness. The incompetence that we feel in this respect is shared by almost every man on whom the great responsibilities of society are devolved. The statesman cannot control the destinies of nations, nor the military commander the events of battles. The most eloquent pleader may fail to convince the judgment of his hearers, and the most skilful pilot may not be able to weather the storm. Yet it is not the less necessary that responsible men should study deeply and understandingly the science of their respective vocations. It is not the less important, for the sake of those whose safety is, and always will be, committed to their charge, that they should look with unbiased judgment on the necessary results of inevitable causes; and while an earnest and inquiring solicitude should always be kept alive in regard to the improvement of professional knowledge, it should never be forgotten that knowledge has for its only just and lasting foundation a rigid, impartial, and inflexible requisition of the truth."

Albany Medical College.

Centennial of Bromine.—The University of Montpellier is to celebrate in November the hundredth anniversary of the discovery of bromine by the professor of chemistry there, J. Balard.

BLOOD TRANSFUSION IN PERNICIOUS ANEMIA *

HAROLD W. JONES, M.D.
PHILADELPHIA

Blood transfusion in pernicious anemia produces better and more permanent results than any other therapeutic measure. Although transfusion has been used in this disease for many years, the early results were not satisfactory. The causes of these poor results were: (1) failure to cross agglutinate before each transfusion; (2) the use of improper methods of transfusion; (3) the injection of too large amounts of blood, and (4) too long an interval between transfusions. Many have said that transfusion did little good; others that it seemed to retard progress, and a few that it definitely shortened the life of the patient, all of which has served to bring discredit on this useful therapeutic measure.

TYPING AND CROSS AGGLUTINATION

The institution of typing by Shattuck, in 1899, gave added incentive to the use of transfusion by increasing its safety. However, the terms "universal donor" and "universal recipient" came into use. The belief that a so-called universal donor could safely give blood to any group and that a universal recipient could receive blood from any donor caused many hemolytic reactions. It was soon found that even though two persons were of the same type, it was possible that the serum of either might agglutinate the cells of the other. Cross agglutination was developed, and its use has distinctly lessened the number of serious reactions. Changes in the patient's type may occur following a transfusion, and it is therefore safer to cross agglutinate before each transfusion, even though the same donor is used.

METHOD OF TRANSFUSION

The citrate method was instituted by Lewisohn to offset the disadvantages of Lindeman's method; that is, coagulation in the instrument. It should seldom be necessary to add a foreign body, such as sodium citrate, to the blood if a method is available that permits of the transfusion of blood without coagulation. The Unger method fulfils this requirement. Moreover, the injection of 2 per cent sodium citrate solution has resulted in death. Blood platelets are destroyed when the citrate method is used, and reactions are more common with citrated blood than with whole blood. Because of these facts, the transfusion of whole blood should be the method of choice.

Many patients with pernicious anemia have very small veins, but it should seldom be necessary to expose the vein in order to insert the needle. Frequently, there may be only one or two available veins; and, if these are exposed, incised or tied off, it prevents their easy use at an early interval for further transfusion.

AMOUNT OF BLOOD TRANSFUSED

It has been the custom in the past, and still is in some clinics, to administer large amounts of blood at a single transfusion; that is, from 800 to 1,200 cc. This amount in a disease in which the total blood volume is not reduced places a strain on the circulation. The myocardium in pernicious anemia has degenerated and therefore the injection of such large amounts of blood is attended with danger. It has also been suggested that the injection of large amounts of blood may depress regenerative function.

Dr. Colwell of Pittsburgh employs small amounts of blood, from 20 to 50 cc., at frequent intervals. He finds that in many patients the blood elements can be increased thereby. My belief is that blood given in such amounts is useful between transfusions of larger amounts, when there is difficulty in obtaining a suitable donor. It may prevent a fall in red blood cells and hemoglobin until such time as a transfusion of a larger amount can be given. Fifty cubic centimeters of blood will not, however, furnish sufficient blood elements to reduce urgent symptoms materially, and the use of small amounts of blood is not likely to be of much benefit in such states. Enough blood should be introduced to lessen or remove the symptoms resulting from the deficient oxygen-carrying power of the blood.

The plan that I use is as follows: In urgent cases, in which the patients are unconscious or stuporous, amounts of from 450 to 600 cc. are given. To patients who do not suffer from such severe symptoms and whose hemoglobin is between 20 and 30 per cent, and the red blood cells from 700,000 to 1,000,000, approximately 100 cc. is given at the first transfusion. The same amount is used for the first transfusion when the anemia is less severe. Serious reactions very frequently follow the first transfusion, and the administration of a small amount of blood lessens this danger. It is also to be noted that if more than a week elapses between transfusions, reactions occur more readily.

INTERVAL BETWEEN TRANSFUSIONS

In pernicious anemia the hemoglogin and red blood cells are increased following a transfusion, but in from three to seven days, in most instances, a drop of these elements occurs. This reduction is often greater than the previous increase, bringing the blood count to a lower level than before the transfusion. Because of this, when the interval between the transfusions is too long, the good accomplished by a single transfusion is lost. The result is similar when a second transfusion is given. Recently, a patient was seen who had received six transfusions of from 500 to 800 cc. every two weeks, whose red blood cells and hemoglobin were lower after the series of transfusions than before. Permitting too long an interval to elapse between transfusions is responsible for more of the poor results in pernicious anemia than any other single factor. To overcome this, the transfusions are given every three to five days, thereby adding blood elements before there is a decided decrease. With the use of these smaller amounts of whole blood, from 350 to 450 cc., depending on the weight of the patient, from every three to five days, it has been possible to bring the red blood cells and hemoglobin to a normal point in nearly every instance. In addition, when smaller amounts are given, a donor can be used more frequently.

REACTIONS

Reactions may occur with whole blood transfusions. They are of several varieties: (1) chilly sensations; (2) a rise in temperature of from 1 to 2 degrees; (3) a chill plus a rise in temperature; (4) urticaria, pruritus, subglottic edema, or pulmonary edema; (5) mild hemolysis characterized by petechiae, and (6) severe hemolytic reactions, petechiae, ecchymosis, jaundice or

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* From the Department of Medicine, Jefferson Medical College of Philadelphia.

* Read before the Medical Section, College of Physicians, Philadelphia, Dec. 22, 1924.

hemoglobinuria. In the first four forms of reactions, the hemoglobin and red blood cells are not reduced. The hemolytic reactions are dangerous, and death may ensue.

There are difficulties which one is bound to meet in treating pernicious anemia by transfusion. If the patient is unfortunate enough to be a type I or type III (Moss), it may be difficult to find sufficient donors. Secondly, it may require from five to fifteen transfusions to bring about a normal blood count. It is seldom that the patient has a sufficient number of friends or relatives whose blood matches perfectly.

Results of Blood Transfusions in Treatment of Pernicious Anemia

	Sex*	Age	Normal Blood Count	Number of Transfusions	Relapses	Results	Time Since Last Transfusion	Time Since First Transfusion
1	♂	48	Once	6	..	Working	7 years	7 years
2.	♂	39	Thrice	73	3	Hospital, ambulatory	2 weeks	36 months
3	♀	42	Thrice	17	2	Working	4 months	2 years
4	♂	60	Twice	26	1	Working	13 months	2 years
5	♀	34	Twice	20	1	Working	15 months	21 months
6	♂	58	Twice	17	1	Working	2 months	17 months
7	♀	70	Thrice	16	2	Working	2 months	15 months
8	♂	52	Twice	16	1	Working	2 months	14 months
9	♂	38	Thrice	27	2	Very much improved	2 months	9 months
10	♂	59	Four	29	3	Blood count normal, ataxia marked	1 month	8 months
11	♂	60	Thrice	20	2	Working	2 months	8 months
12	♀	42	Once	1	..	Working	6 months	8 months
13	♀	40	Once	6	..	Working	4 months	5 months
14	♂	68	Once	6	..	Working	3 months	4 months
15	♀	42	Once	8	..	Well	2 months	3 months
16	♀	52	Once	5	..	Improved	1 month	2 months
17	♂	38	Once	11	..	Working	2 weeks	2 months
18	♀	38	Once	1	..	Working	2 months	2 months
19	♀	64	Nearly normal	3	..	Left hospital, unable to trace	....	....
20	♂	40	Never	10	1	Left hospital, unable to get donors	....	....
				318				
				Transfusions Resulting in Death				
21	♂	52	Thrice	35	2	Death, pyonephrosis	....	14 months
22	♂	52	Twice	12	2	Death following transfusion	.. ..	11 months
23	♀	60	Twice	12	2	Death; no donors	....	12 months
24	♀	72	Once	9	..	Death; refused more	7 months	8 months
25	♀	38	Twice	15	1	Death	.. ..	8 months
26	♂	70	Once	12	..	Death, pneumonia; blood normal at death	....	4 months
27	♂	38	Never	7	1	Death; no donors	....	4 months
28	♂	70	Never	3	..	Death; refused more	....	2 weeks
29	♀	48	Never	1	..	Death following transfusion	....	....
				119 318				
				437				

* In this column, ♂ indicates male; ♀, female.

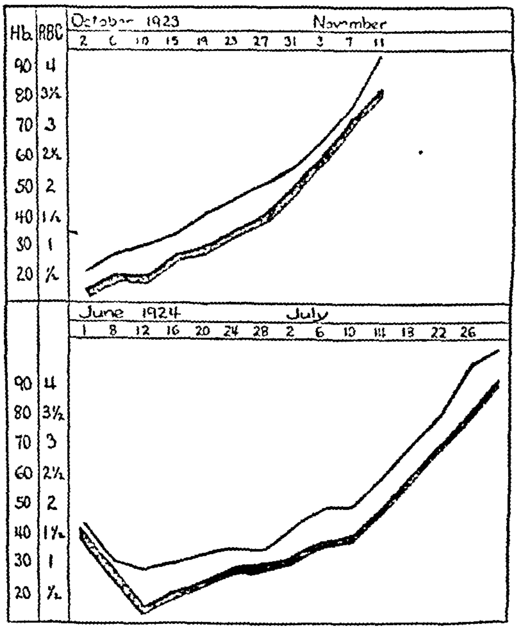
To obtain donors means the outlay of from $25 to $50 for each transfusion, and many cannot afford this. Then, too, until the hemoglobin is 50 per cent and the red blood cells 2,500,000, the improvement is usually much slower than after this point is reached. Sometimes several transfusions are given with seemingly very little improvement. These obstacles, however, are not insurmountable, and the results obtained warrant the effort. The results of some of our transfusions are given in the accompanying table.

RESULTS

Thirty patients were treated by transfusion; twenty are living; there were ten deaths.

Of the twenty living, the time that has elapsed since transfusion varies from a few weeks to seven years. The time elapsing from the date of the first transfusion varies from two months to seven years. In five patients, the blood has been brought to a normal count three times. In four patients, the blood has been brought to a normal count twice. Thirteen of the twenty patients are performing at least a part of their duties.

One patient in whom marked nervous phenomena developed was brought to a normal blood count three times in a period of fourteen months. Death resulted from pyonephrosis. The hemoglobin and red blood cells were practically normal at that time. One patient died of pneumonia. The blood count was normal. One patient, with a blood count nearly normal, died of a hemolytic reaction. One died because we were unable to get further donors for him. His blood count had been brought to normal twice. One patient refused more transfusions after being brought to a normal count twice. One patient, after being brought to a normal count twice, died six hours after a transfusion given at the beginning of the third relapse. One died two days after the first transfusion. This is the only patient whom we were not able to bring to a normal count at least once with transfusions when donors were available.



Results of transfusions in case 4. On each of the dates given, there was a transfusion of 400 cc. From November to June, the patient was well and working. Dec. 20, 1924, the patient was well, taking trips about the country, and in better health than for ten years. Light line, red blood corpuscles, heavy line, hemoglobin.

WHAT WE CAN HOPE TO ACCOMPLISH BY MEANS OF BLOOD TRANSFUSION IN PERNICIOUS ANEMIA

1. Life in those patients who present urgent symptoms can be saved.
2. Unpleasant symptoms can be alleviated and the patient given added strength and hope.
3. A so-called remission can be stimulated.
4. The patient can be carried along at a higher nutritional level with the hope that a remission will result. It is reasonable to assume that he has a greater opportunity to develop a remission when the blood is above 50 per cent than when it is between 20 and 50 per cent.

5. What appears to be a cure in an occasional patient can be brought about.

In order to accomplish these results, the following points must be observed:

1. A small amount of blood (100 cc.) should be given at the first transfusion to offset the possibility of death in a very few cases, unless the patient requires a larger amount to carry him past the danger point.
2. Whole blood should be used.
3. Moderate amounts of blood, from 350 to 450 cc., should be given.
4. In the hemolytic stage, the amounts should be increased daily, beginning with 50 cc.
5. Transfusion should be employed at four-day intervals.

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VERY LATE ABSCESSES IN POSTOPERATIVE SCARS *

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It is well recognized that tissues which have become infected may be subject to recurrence of acute inflammation for considerable periods after their apparent complete healing. This principle was emphasized by experience with wounds during the war. It soon became apparent that corrective and cosmetic operations on scars of battle wounds that had been originally infected were very apt to relight the previous activity of the infection, sometimes with disastrous results. Accordingly, it became a generally accepted rule to postpone any such contemplated improvement in scars for a period of at least a year after the final healing of the original wound.

The same experience has resulted from operative treatment of joints and bones that had formerly been the site of infectious processes. For instance, tuberculosis of the joint may be stirred into renewed virulence by attempts to correct deformities years after all evidence of activity has subsided. This raises the question as to how late one may possibly find recurrences of inflammation in tissues which have seemingly been entirely free of infection for a long interval. Experimental work on this subject would scarcely be feasible, and it is therefore of interest and of considerable practical importance to call attention to the group of cases here presented and their direct bearing on the question at issue. It is a common experience that suppurating wounds, after they have apparently healed, may develop recurrent abscesses within several days or a few weeks. It is unusual for trouble to manifest itself later than this. We present four illuminating cases from our personal experience, with no attempt to search the literature for further examples.

REPORT OF CASES

Case 1.—*History.*—A white man, aged 37, had been operated on, Dec. 27, 1921, for gallstones. A diseased gallbladder and dilated common duct were found, with gallstones impacted immovably in the papilla of Vater; these gallstones were removed by a transduodenal incision and the wound was drained. The patient made an uneventful recovery and was discharged from the hospital with a completely healed wound in about five weeks.

Second Operation.—July 8, 1922, the patient returned with a large abscess in the old scar of about five days' duration. This was incised and drained, and a quantity of foul smelling pus with colon odor was evacuated; no foreign body, either gallstones or suture, was found. Unfortunately, no culture is recorded. The abscess cavity had dense scar tissue walls and evidently had formed within the old scar. The patient's postoperative condition was uneventful, and the drained wound healed promptly and has given no further trouble up to the present time. The interval between operations was six months.

Case 2.—*History.*—A white man, aged 28, was operated on, Dec. 6, 1922. A well walled off appendix abscess was found lying on the outer side of the ascending colon, which was drained. A gangrenous appendix was removed, and the wound was drained. The patient made an uneventful recovery, his wound having completely healed in about six weeks.

Second Operation.—July 25, 1924, the patient presented himself complaining of pain and tenderness in the scar of the old incision, which had been noticed for the past four or five days. It had all the clinical signs of an abscess. He was operated on, and thick, colon-smelling pus was evacuated. A small particle of foreign body about the size of a pin head, which may have been the remains of a fecal concretion, was found. The wound healed uneventfully, and there has been no trouble since then. Unfortunately, in this case also no cultures were recorded from the pus. The interval between the operations was eighteen months.

Case 3.—*History.*—A white boy, aged 12 years, was operated on, Aug. 1, 1919, for acute appendicitis; the usual removal of an acute unruptured appendix was done and the wound closed with silk sutures throughout. Healing was apparently by first intention and the patient was discharged as being well. After a few days at home an abscess developed in the wound, which was opened and a black silk suture was discharged. This closed in a few days and the wound then appeared to be completely healed.

Second Operation.—The patient had no trouble from his old incision until a short while before Dec. 9, 1925. He then began to complain of some tenderness about his old scar, and it was examined by several physicians; there was found a distinct, firm swelling under the skin scar, slightly tender on pressure and not noticeably changing on coughing or straining. There was some difference of opinion as to the exact nature of this condition, the two probabilities being postoperative hernia becoming incarcerated, or a recurrent abscess in the scar. The last opinion was the one considered more probable. December 9, the scar in the skin was excised, and the skin and subcutaneous fat were found normal, but under the aponeurosis of the external oblique was found an abscess with very dense fibrous walls containing about 2 drachms (7.5 cc.) of thick creamy pus, which was odorless and from which a growth of *Bacillus alkaligenes* was obtained. A small black particle, which was at first thought to be a remnant of silk ligature, proved to be a fragment of blood clot. The wound healed in a very short time and there has been no further trouble. The interval between operations was six and one half years.

Case 4.—*History.*—A white man, aged 46, was operated on June 3, 1912, for right inguinal hernia. The usual operation was done and silk sutures were used in the closure throughout. The only complication in the postoperative course was a cystitis following catheterization. The wound at no time showed any evidence of infection.

Second Operation.—During the summer of 1919, the patient had swelling, pain and tenderness in the scar, of a few days' duration. This was opened by an incision, and a quantity of pus was discharged and with it a silk suture from the depth of the wound. The wound drained for a few days and healed promptly; there has been no subsequent trouble. The interval between operations was seven years.

COMMENT ON CLINICAL FACTS

Previous Infection.—Of these four cases, one was in origin a heavy infection, with drainage—case 2, gangrenous appendicitis with localized abscess. In case 1 there was potential infection, and drainage was done; a gallstone in the papilla of Vater was removed by the transduodenal approach. In case 3 there was a history of stitch abscess during convalescence from appendectomy. Case 4 was a clean hernia operation without any evidence of postoperative infection so far as the wound was concerned. This incidence of a previous infection of the wound in three out of four cases is of great significance, but perhaps of more arresting interest is the fourth case with no such antecedent history and yet with a definite abscess very late after operation and the discharge of a foreign body. Further discussion of the problems here involved will be advanced later.

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Location of Scars.—It will be noted that all four of these operations involved the soft parts of the abdominal wall, with no involvement of bone or joint.

Character of Secondary Abscesses.—All the abscesses contained frank, creamy, "laudable pus"—not simply serum or serosanguineous exudate. A foreign body was found in the single case which had no history of a previous infection at the original operation, and also in the appendix abscess case. No fistula into a hollow viscus, and no implication of any abdominal organ was observed in any of the secondary abscesses. Unfortunately, bacteriologic study of these cases is sadly deficient. Two presented distinct colon odor of the pus, but the hospital records show no report as to cultures. In a third case the abscess was opened in the private office of one of us, and no cultures were made. The remaining abscess gave a growth on culture that was identified as the unusual organism—at least in surgical experience—*B. alkaligenes.*

Clinical Course of Cases.—These patients all presented the clinical signs of ordinary abscesses except in case 3, which lacked any very acute signs of inflammation, and in fact was not positively diagnosed as such, although this was considered the most likely diagnosis. This case was also the one from which *B. alkaligenes* was grown. All these abscesses healed promptly after the evacuation of pus, and no subsequent trouble has arisen in any of them.

A summary of the cases will show that, in periods running from six months to seven years, abscesses may make their appearance in tissues that were formerly operated on but which have apparently completely returned to normal in that interval. One must consider several possibilities in an attempt to reach an explanation of these facts. In the first place, it may be a mere coincidence that an abscess should pick out for its locus the scar of the former operation, just as an abscess may occur from various causes in any other portion of the body. This explanation is mentioned merely to include all the possible theories to account for such occurrences. It will not impress many as being highly probable. The second and a much weightier explanation is that scar tissue anywhere is a less resistant structure than normal tissue to the development of infection, and that this recurrent abscess may not be in the strict sense recurrent; in other words, a new infection may select scar tissue because of the known susceptibility of scar to injury of any sort. Case 3 was that of a boy who passed through an attack of measles shortly before operation for his abscess, which may lend some color to this idea; the implication being that, with measles, an infectious disease in itself, and with a lowered local resistance in the scar, the combination was provided which led to the development of the abscess. Case 4 is of even greater significance. This patient had no known infection of his original wound, yet seven years afterward an abscess developed about a silk stitch buried in old scar. This would seem strong evidence for the explanation of some cases at least as abscesses—not recurrent but de novo—in tissues of impaired vitality, with the added factor of nonabsorbable foreign bodies to aid in the development of infection.

A third, and in our opinion the most acceptable, conception of the process under consideration is that the tissues harbor in the site of the scar a persistent contamination with living organism during all the period of apparent quiescence. During this period the virulence of the bacteria is so feeble, and the general and local health of the tissues is so good, that a condition of balance is maintained, permitting the organisms to remain alive and presumably to multiply sufficiently just to sustain themselves, but on the other hand keeping them in such check that they are unable to cause any clinical symptoms of trouble. Then for some reason this balance is disturbed. This reason may conceivably include a great many possibilities concerning the local or general health of the tissue or the virulence of the organism. As a result of the disturbance, the bacteria take on renewed activity, become sufficiently virulent to give rise to acute inflammatory changes, and the clinical development of an abscess results. It would be unnecessary to attempt a detailed consideration of all the possible occurrences that may cause the balance to be upset: One at once thinks of general illness that lowers the health of the patient, of local injuries to the scar, and of changes in the body chemistry disturbing the intricate system of resistance to infection. Speculation along these lines is probably not profitable, although it may be interesting. The point that we wish to emphasize is the fact that these cases bear out in a brilliant manner the same clinical experiences already referred to in the opening of this paper, which has been illustrated by the war wounds and infected joints and bones; namely, that tissues once infected may harbor for a surprisingly long period organisms still potentially virulent, and that even as late as seven or eight years afterward renewed activity may take place.

Local Health Organization.—The exact plan of local health service that will fulfil all the essential requirements of any selected community must be adapted to the circumstances and conditions peculiar to that community. Because of climatic, geographic, political, social, racial, economic or other purely local characteristics, the vital health problems of one city may well differ from the particular problems that are of especial concern to some other city. This idea has led at times to the conclusion that it is impracticable to propose any standard or uniform basis for health department organization. As a matter of fact, however, many of the obstacles to be overcome in developing an adequate and comprehensive plan for community health service are imaginary rather than real ones. Man is subject to certain diseases and disturbances that obey rather fixed laws, irrespective of purely local conditions. In spite of such considerations, the essential public health problems in different cities differ not so much in their nature as in the comparative magnitude of the problems presented. There are certain basic requirements that should be fulfilled in practically every community, so that it is possible, therefore, to propose a more or less "ideal" health service that will at least represent minimum requirements.—Cumming, Hugh: *Pub. Health Rep.* **41**:372 (Feb. 26) 1926.

THE INTRACUTANEOUS SALT SOLUTION TEST

ITS USE AS A TEST OF THE EFFICIENCY OF THE CIRCULATION IN THE EXTREMITIES *

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In May, 1925, one of us[1] reported that the intracutaneous salt solution test, as devised by McClure and Aldrich[2] for the study of edema, afforded a simple method of determining the efficiency of the circulation in the extremities. The present report deals more fully with the nature of this reaction and with its clinical applications.

NATURE OF TEST AND MECHANISM OF ACTION

When 0.2 cc. of an 0.85 per cent salt solution is injected into the skin of a normal individual, sixty minutes or more is required for its complete absorption. In cases showing edema, the disappearance time is decreased in direct ratio to the degree of edema, and in extreme cases the injected fluid disappears so rapidly that it is impossible to produce a wheal. These observations hold true for all edema, whether it is of the so-called renal or cardiac types.

Aldrich[3] discusses the mechanism of this reaction and concludes that in cases of edema there is an increased affinity of the tissues for water. The injected salt solution is more rapidly taken up in edema because the tissues, needing more water, take it from the most available source, in this instance, the wheal produced by the injection. This explanation is based on the work of Martin H. Fischer,[4] who in 1908 first called attention to *the rôle of the tissues in the production* of the edemas. He postulated that the normal turgor of a tissue depended on the physical state of its colloids, and that edema resulted whenever the water holding power of its colloids was increased and there was an available supply of free water. This state could be brought about during disease processes by accumulation in the tissues of acids, amines or substances having a similar action. This theory was severely criticized by most of the recognized workers in medicine and the allied sciences, as it was a current belief that edema was the result of increased permeability of blood vessels and an increase in the intravascular pressure. These observers stated that they could not demonstrate any acidosis in the blood or tissue fluids by microchemical analyses, and therefore denied its existence in early edema and its relation to edema. Fischer has always maintained that one might have localized acidosis without any evidence in the blood, as determined by the usual methods of analysis, and recently this has been proved by Rous,[5] who demonstrated localized cutaneous acidosis in many conditions. In general, he found that all agents that interfered with tissue oxygenation produced this condition, which he called "outlying acidosis."

Subcutaneous injections of epinephrine were shown by Rous to produce outlying acidosis in the skin of a rat. The following experiment illustrates the effect of this substance on the salt solution disappearance time:

In a normal individual, 0.2 cc. of 0.85 per cent salt solution was injected intracutaneously in the right thigh. It disappeared in sixty-five minutes. A similar injection was made 15 cm. away from the first. Then 1 cc. of 1:5,000 solution of epinephrine was injected subcutaneously in the region of the wheal. This wheal required only forty-five minutes for its complete absorption A third wheal produced by the intracutaneous injection of 0.2 cc. of 1:5,000 solution of epinephrine disappeared in thirty minutes.

Pilcher[6] has shown that the size of the wheal produced as a result of the intracutaneous injection of *morphine can be reduced by subcutaneous injections* of epinephrine, an observation that is the corollary of the foregoing finding.

There is good experimental evidence, therefore, for the belief that there is an increase in the rate of absorption of water from areas of localized acidosis and that such acidosis is commonly produced by anoxemia.

Localized acidosis can be produced by obstruction to the venous return just as readily as by inadequate arterial blood supply, as the stasis soon produces the latter condition. Patients with varicose veins afford interesting opportunities for study of the effect of stasis on the salt solution disappearance time, as the degree of stasis and its duration can be regulated by changes in position of the legs. The following protocol illustrates such a case:

In a patient with marked varicose veins of both legs with slight edema of each leg from the knee down, a standard wheal was produced on each side, at a point 5 cm. above the ankle. The patient was lying in bed. The wheal disappeared from the right side in five and one-half minutes, and from the left side in fifteen minutes.

The legs were then allowed to hang over the edge of the bed, with the patient sitting up. The test was repeated immediately. There was a marked increase in the cyanosis of both feet, and the veins were engorged. The wheal disappeared from the right side in two and one-half minutes and from the left side in eight minutes. The difference in stasis, i. e., the increased anoxemia produced by the change in position, halved the disappearance time.

CLINICAL APPLICATION

In cardiac disease during decompensation there is a stasis, especially in the dependent structures, which is comparable to that observed in cases showing varicose veins. During the decompensation, the disappearance time is lessened in the edematous areas, though it may be quite normal in areas such as the skin over the deltoid, where the circulation is adequate. As the circulation improves, the disappearance time increases. From a study of a number of cases tested during decompensation and after it had cleared up, it has been determined that pitting over the shins never occurs with a disappearance time over twenty-five minutes, and that it can usually be detected when the time has been reduced to twenty minutes or less.

In peripheral vascular disease also, the disappearance time is decreased in proportion to the degree of anoxemia produced by the vascular involvement. This is well illustrated in cases of intermittent claudication, diabetic gangrene and thrombo-angiitis obliterans, as the following protocols will demonstrate:

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* From the Medical Service of Mount Sinai Hospital.

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4. Fischer, M. H.: Oedema and Nephritis, ed. 3, New York, John Wiley and Son, Inc., 1918.
5. Rous, Peyton; and Drury, D. R.: Outlying Acidosis, J. A. M. A. 85: 33 (July 4) 1925.
6. Pilcher, J. D.: Mechanism of the Antiedemic Action of Epinephrine, J. A. M. A. 85: 1482 (Nov. 7) 1925.

P. D., aged 38, a Russian Jew, was admitted to the hospital, July 8, 1925, complaining of severe pain in the calves of the legs on walking. The pain came on after walking about 300 yards, and was so severe that he could not proceed but was forced to rest. In a few minutes the pain disappeared and walking could be resumed, only to be again interrupted after exercise. The pain was most marked in the right leg.

Physical examinations and the usual laboratory tests revealed no serious organic disturbances. The dorsalis pedis and posterior tibial arteries could not be palpated on either side. The Pachon oscillometer showed marked diminution in the circulation in both legs from the lower third of the thigh down, most marked on the left. The results of the salt solution test on the day of admission are given in table 1.

Table 1.—*Results of Salt Solution Test in First Patient*

	Right Leg, Minutes	Left Leg, Minutes
Base of great toe	5	9
	16	13
Ankle	24	48
	21	77
	72	78
Below knee	80	85
Above knee	78	80

A diagnosis of Buerger's disease with intermittent claudication was made, and sympathectomy was advised. Periarterial sympathectomy was performed on the right femoral artery, July 13. The next day the reading at the base of the right great toe was twenty minutes, and on the second day following the operation it had risen to forty minutes.

A. B., a woman, aged 58, was admitted to the hospital, June 4, 1923, because of superficial gangrene of the left great toe, occurring in the course of neglected diabetes. Under dietetic management the toe healed, and she was discharged to the outpatient department. She was readmitted one year later, in June, 1924, with a recurrence of the same condition. The lesion healed again under appropriate conservative treatment. April 14, 1925, she was admitted for the third time with a similar process involving the right great toe. The necrotic material was infected, and the whole foot was swollen. Her general condition was poor, as there was marked arteriosclerosis with hypertension but without nephritis. The left foot, which had been involved on the two previous occasions, showed the loss of small bits of the distal phalanges of the two inner toes. The peripheral pulses on this side were palpable. On the gangrenous right side, no pulses could be detected in the popliteal, dorsalis pedis or posterior tibial vessels. The results of the salt solution test performed two days after admission are given in table 2.

Table 2.—*Results of First Salt Solution Test in Second Patient*

	Right Side, Minutes	Left Side, Minutes
Middorsum of foot	15	55
Ankle	45	60
	60	70
	65	70
	65	80
Below knee	70	80
Above knee	70	80

Because of the relatively good results previously obtained by conservative treatment in this case and the small reduction in circulatory efficiency as indicated above, medical treatment was carried out. The gangrene spread slightly during the next two weeks. The infection did not respond well to the treatment, and the patient was septic. The salt solution test was repeated on the fifteenth day, with results as given in table 3.

From the result of the second test, it was obvious that the circulatory deficiency was increasing in the right leg, and that in the left leg gangrene was impending if the deficiency continued to increase. On the fourth day following this test, gangrene set in in the left foot. Five days later the test was repeated with results as given in table 4.

Table 3.—*Results of Second Salt Solution Test in Second Patient*

	Right Side, Minutes	Left Side, Minutes
Middorsum of foot	9	25
Ankle	17	35
	20	39
	27	62
	36	65
	41	68
Below knee	44	68
Above knee	51	70

On the next day both legs were amputated at the junction of the middle and lower thirds of the thigh.

The pathologic report showed very marked atherosclerotic changes in the femoral popliteal peroneal and anterior tibial vessels with occlusion of the last two in places by medial sclerosis and plaques. All of the vessels were markedly narrowed. The posterior tibial artery was almost entirely obliterated by endarteritis. The left leg showed a picture similar to that shown by the right. All vessels from the popliteal space down were narrowed and occluded in places by plaques.

In this case changes in the clinical condition of the patient were accurately followed by means of the salt solution test, and the oncoming gangrene of the left leg was indicated several days before it became manifest.

Table 4.—*Results of Third Salt Solution Test in Second Patient*

	Right Side, Minutes	Left Side, Minutes
Middorsum of foot	7	12
Ankle	7	12
	8	13
	12	14
	17	15
	39	18
	45	23

An interesting case which illustrates the value of this test in differential diagnosis was reported to us by Dr. Walter G. Stern:

A man, aged 62, was crushed between the bumpers of two street cars. On admission to the hospital he was in profound shock; the right thigh was tremendously swollen, purple and cold. No peripheral pulses were palpable in the injured leg. The clinical diagnosis depended on differentiating between shock and massive hemorrhage from rupture of the femoral artery. The intradermal salt solution test showed a disappearance time within normal limits, and a diagnosis of shock without rupture of the femoral artery was made. The patient died, and at necropsy the hemorrhage was found due to muscle injury and not to rupture of any large vessel. It was by means of this test that the surgeon was spared the embarrassment and the patient the further injury of an operation.

CONCLUSIONS

1. The intradermal salt solution test is a rapid and accurate method of determining tissue affinity for water.
2. Sixty minutes or more is the normal disappearance time.
3. In all conditions associated with localized anoxemia, the salt solution disappearance time is decreased.
4. In cardiac disease with decompensation, the disappearance time is always twenty minutes or less in

the edematous areas. If there is no decompensation, normal values are obtained.

5. In cases with peripheral arterial disease, the disappearance time is always decreased in areas showing clinical involvement. From observations in thirty-five cases, it has been noticed that readings below ten minutes have been found only in tissues immediately above areas of gangrene. Readings between ten and twenty-five minutes are strongly suggestive of developing gangrene.

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THE TREATMENT OF CARDIAC PAIN BY PARAVERTEBRAL ALCOHOL BLOCK *

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In recent years the surgical treatment of cardiac pain has received much attention. The objective of the surgeon is to sever the pathway that conducts pain stimuli from the heart to consciousness. The identification of this pathway is based largely on comparative neuroanatomic studies. These investigations show that these structures vary not only in different animals but in man as well. Because of the insufficiency of the anatomic knowledge, as many as eight different operations have been devised for the relief of cardiac pain. The following briefly summarizes the operations that have been performed:

Cervical sympathectomy, including resection of the stellate ganglion on the left side and at times bilaterally.[1]

Section of the depressor nerve on the left side and at times bilaterally.[2]

Section of the sympathetic cord above the stellate ganglion on the left side.[3]

Section of a nerve fiber emerging from the vagus nerve on the left side alone or at times bilaterally.[4]

Cervical sympathectomy without resection of the stellate ganglion on the left side and at times bilaterally.[5]

Resection of the sympathetic cervical cord (without the inferior cervical ganglion) completed by section of the cervical vagus branches which enter into the thorax as well as the so-called vertebral nerve and the rami communicantes, which unite the stellate ganglion with the sixth, seventh, eighth cervical and first dorsal nerves.[6]

Section of the cervical sympathetic, together with the superior cardiac nerve on the left side.[7]

Section of the cervical sympathetic above the inferior cervical ganglion, including section of the vertebral nerve on the left side.[4]

This enumeration gives ample evidence of the insufficiency of the anatomicophysiologic knowledge of the pathway of pain from the heart to the thalamus, and suggests sharply an uncritical attitude on the part of those who subject patients to an operation based on such fragmentary understanding. Sir James Mackenzie [8] has bitterly opposed reckless operative intervention based on such meager scientific data.

In reviewing the operative results, conflicting and discouraging information was obtained. In a series of sixteen cases, Coffey and Brown [7] reported that only six patients were completely relieved; that there was a mortality of 12 5 per cent; that the operative residua, i. e., Horner's syndrome, severe constant sharp pain over the left half of the head, chest and left arm, were frequent and troublesome. Jonnesco [9] in his operations showed graphically the dangers of operative intervention in the absence of any adequate knowledge of the physiology of the cervical sympathetic. Two of his patients died from pulmonary edema four hours after the operation; one was found dead the day following operation with the same phenomenon of pulmonary edema; another was found dead in his bed the morning following the operation; a fourth died several hours after; a patient of Hofer's died fifteen hours after the same operation These represent only a few of the fatalities following operative intervention of the sympathetic for relief of angina pectoris.

It is our purpose to report on the use of paravertebral alcohol injections into the dorsal root ganglions and rami communicantes as a more rational and absolutely safe procedure for the relief of cardiac pain. Procaine has been injected paravertebrally for relief of angina pectoris and aortalgia by Danielopolu and Hristide,[10] Luger,[11] Pal,[12] Brun and Mandl,[13] Mandl [14] and Kappis.[15]

The employment of paravertebral alcohol block to relieve pain in malignant disease [16] of the chest as well as in a variety of other conditions [17] has given us such gratifying results that its use in the different types of cardiac pain seemed worth investigating.

THEORY ON WHICH METHOD IS BASED

Nearly all pain impulses, irrespective of their point of origin and of their pathway in the spinal cord, ultimately enter the spinal cord through the dorsal root ganglions. Constant stimulation of the small cells in the dorsal root ganglions by impulses coming from the heart is referred to the skin segments supplied by the respective ganglions, which in turn refer this irritation to the consciousness as pain. The axons of these small cells are unmyelinated and form fibers which convey protopathic stimuli. The introduction of alcohol into these irritable nerve fibers produces a wallerian degeneration. The site of the injection is determined by carefully mapping out skin areas of hyperesthesia, hyperalgesia and hyperthermesthesia on the chest wall. The nerve roots and dorsal root ganglions that supply the areas of *increased epicritic and protopathic sensibility* are presumably the ones kept in a state of irritation by the bombardment of afferent impulses from the heart. With the usual technic of paravertebral injections, from

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* Read before New Utrecht Medical Society, Nov. 23, 1925

* From the Medical Division, Montefiore Hospital for Chronic Diseases

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3 to 5 cc. of an 85 per cent solution of alcohol is injected into the nerve roots identified by the foregoing procedure.

REPORT OF CASES

Case 1.—*History.*—R. C., a woman, aged 20, with aortitis and aortic insufficiency caused by congenital syphilis, began to complain of pain in April, 1923. In the beginning, the pain appeared over the precordium. In a few months the discomfort extended to the left shoulder blade and down the left arm and the back of the chest on the left side. The arm pain was sticking and constricting in character and especially worse during the night. Since April 17, 1924, the pain had been much more severe. The attacks consisted of paroxysms of severe sticking pains lasting a few minutes and leaving in their wake a dull ache over the same area. These paroxysms were brought on with only slight exercise, and as a result greatly curtailed physical activities.

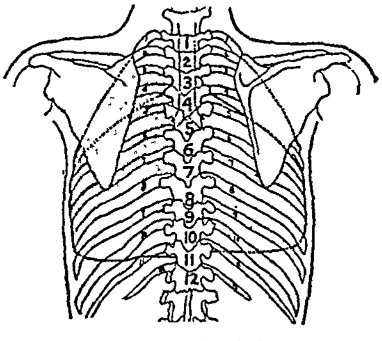

Fig. 1.—Sensory findings before injection.

She received a course of arsphenamine and mercuric salicylate, which was completed, Oct. 2, 1924; potassium iodide, which was discontinued several months ago, and a series of injections of bismuth subsalicylate.

Following this series of treatments she was slightly more comfortable, but the pain still persisted. A paravertebral alcoholic injection was performed, April 23, 1925. After the injection into the fourth, fifth, sixth and seventh dorsal roots on the left side, the patient was almost completely relieved of pain, and in addition was able to carry on increased physical activity to exhaustion without attacks of pain.

For example, before the injection of alcohol she was unable to walk more than one block without developing sharp, excruciating, sticking pain over the left chest anteriorly and posteriorly, with radiation to the left arm as far down as the hand. The pain was so severe that she was forced to stop, the distress lasting two or three minutes at a time. At present she is able to walk from five to ten blocks, and although she at times develops pain, she asserts that it is so mild and fleeting that she pays but little attention to it. Previous to the alcoholic injection she found that on attempting to practice on the piano more than ten or fifteen minutes she would be forced to stop because of the agonizing pain. Now she is able to play for at least one hour and at times more. Only occasionally has she a fleeting short pain over the left precordium.

Sensory Findings.—April 22, 1925, before the injection:

A. Epicritic sensibilities.
   1. Hyperesthesia to light touch with cotton wool extended from the third to the seventh dorsal nerves on the left side anteriorly and posteriorly.
   2. The patient was able to discriminate temperatures ranging between 26 and 38 C. over the same region.
   3. Cutaneous localization was well performed.

B. Protopathic sensibilities.
   1. A zone of hyperalgesia to pin prick extended from the third to the seventh dorsal nerves on the left side.
   2. A marked hyperthermalgesia was observed on the left side of the chest to temperatures above 45 and below 20 C. when compared to the right side. She was able to recognize these extreme differences in degrees on the left side.

June 1, thirty-nine days after the injection:

A. Epicritic sensibilities.
   1. A zone of hypesthesia to light touch with cotton wool extended from the third to the seventh dorsal nerves on the left side. In fact, she hardly perceived the stroke of the cotton wool.
   2. She was definitely unable to discriminate over the injected segments temperatures ranging from 26 to 38 C.
   3. Cutaneous localization was greatly impaired.

B. Protopathic sensibilities.
   1. An area of hypalgesia to pin prick extended from the third to the seventh dorsal nerves on the left side.
   2. A marked hypothermalgesia was found on the left side extending from the third to the seventh dorsal nerves when compared with the right side. There was great impairment in her ability to discriminate between extremes of temperature on the left side, i. e., between 20 and above 45 C.

Conclusion—1. Before injection, a zone of dermatomic irritability extended from the third to the seventh dorsal nerves on the left side. Sensory examination thirty-nine days after the injection showed that the nerve conductivity was greatly reduced.

2. The patient had been free from pain for four months when she was discharged from the hospital. Oct. 25, 1925, we received a letter from her in which she reported that she is able to walk distances as long as a mile without the appearance of pain.

Case 2.—*History.*—F. S., a man, aged 63, with angina pectoris due to coronary sclerosis, complained for the first time fifteen months before admission of a severe boring, retrosternal pain which penetrated anteroposteriorly. Frequently he observed that the pain was burning in nature, simulating "a feeling of hot sand." At times it was so excruciating as to induce crying. The pain would persist from twenty to twenty-five minutes, requiring morphine for its control. He could not walk any farther than three blocks at a time, for if he did, agonizing pain ensued. Twice this necessitated his being taken from the street to a hospital in an ambulance. Inhalation of amyl nitrite often relieved the attacks. Several months before we saw him he felt for the first time slight burning paresthesia down the left upper extremity.

June 25, 1925, he received a paravertebral injection of alcohol into the third, fourth, fifth and seventh intercostal nerves on the left side. Five cubic centimeters of an 80 per cent alcohol solution was used in each dorsal root. Following the injection, the pains were completely relieved within twenty-four hours. There was practically no limit to his ability to walk. He was up and about most of the day doing errands in the hospital, and definitely asserted that he was relieved of his pain. Nevertheless, he complained of shortness of breath when he exerted himself unduly, which was a very prominent symptom.

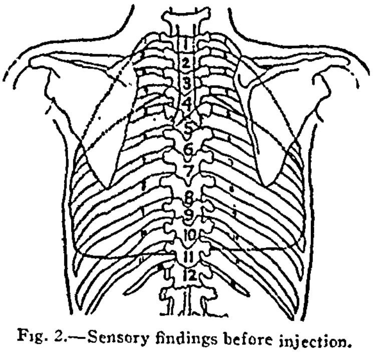

Fig. 2.—Sensory findings before injection.

Sensory Findings.—June 23, 1925, before the injection:

A. Epicritic sensibilities.
   1. A zone of hyperesthesia to light stroking with cotton wool was found over the skin supplied by the second to the eighth dorsal nerves on the left side both anteriorly and posteriorly.
   2. No disturbance was observed in his ability to discriminate temperatures ranging between 20 and 38 C. He had no difficulty locating areas lightly touched.

B. Protopathic sensibilities.
   1. An area of skin hyperalgesia to pin prick extended from the second to the eighth dorsal nerves on the left side.

    2. An extreme hyperthermalgesia was present on the left side when compared with the right side. He was able to distinguish these extremes of temperature on the left side.

October 24, 183 days after injection:

- A. Epicritic sensibilities.
    1. The patient hardly perceived being touched with cotton wool when stroked lightly over the dermatomic segments supplied by the injected nerves.
    2. He was unable to discriminate temperatures ranging between 20 and 38 C.
    3. Cutaneous localization was completely lost.
- B. Protopathic sensibilities.
    1. The patient could not feel the pricking of a pin over the areas of the skin supplied by the injected nerves. He experienced a peculiar dysesthesia; as he put it, "dull and frozen" when a pin was drawn across the skin.
    2. His inability to discriminate the extremes of temperature was quite marked. In fact, there was an almost complete analgesia.

Conclusion.—1. Before injection, a dermatomic zone of irritability was delineated. This extended on the left side over the skin supplied by the second to the eighth dorsal nerves. A sensory examination 183 days after the injection indicated that the nerve conductivity was greatly decreased.

2. He was completely relieved of all pain for a period of four months, when it again appeared. Reinjection was done, this time blocking the first, second, third and fourth dorsal root ganglions and rami communicantes. Before the second injection, the level of root hyperirritability was from the first to the third dorsal root segments. Following the injection, signs of diminished conductivity were noted. He is now again comfortable and free from all pain. He complains, however, of a pressing sensation over his shoulders when he attempts to rise from a sitting position, as well as slight retrosternal pressure.

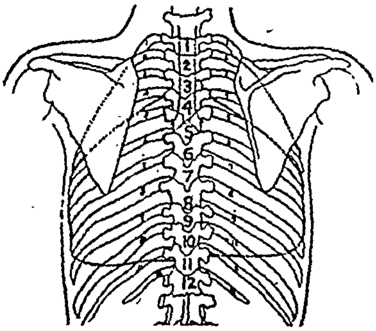

Fig. 3.—Sensory findings before injection.

Case 3.—*History.*—Y. S., a woman, aged 18, suffered from mitral stenosis and insufficiency together with cardiac decompensation. Fifteen months before admission she developed precordial pain for the first time. She described it as sticking in character, lasting from a few minutes to as long as an hour. At times the attacks of pain would appear during the night, awakening her from sleep. She complained that with the sticking pain there was a burning sensation in the skin. These attacks would appear for a few successive days and then disappear, only to reappear again. However, for four months preceding our treatment, the pain had been persistent, always more or less severe. During the ten days before injection the agony was especially disturbing, being both sticking and constricting in type, with no remission either by day or by night. The pain was particularly severe in the left interscapular region, preventing her from reclining on her back. June 25, 1925, 4 cc. of a 60 per cent alcohol solution was injected into the third, fifth, seventh and ninth dorsal roots. After the injection she experienced precordial pain only occasionally, and that which she did feel was slight and fleeting in character. She was able to recline on her back without pain or discomfort over the precordium. Within one week of injection she observed a peculiar itching paresthesia over the site of the injection. On scratching it she noted that there was very little sensation induced when she rubbed the skin.

Sensory Findings.—June 23, 1925, before the injection:

- A. Epicritic sensibilities.
    1. The dermatomic skin areas extending from the third to the eighth dorsal nerves on the left side both anteriorly and posteriorly showed a marked hyperesthesia. She noticed that light stroking with cotton wool induced an unpleasant scratching sensation.
    2. Her ability to discriminate temperatures varying between 20 and 38 C. was normal.
    3. Cutaneous localization was well performed.
- B. Protopathic sensibilities.
    1. A dermatomic zone of hyperalgesia extended from the third to the eighth dorsal nerves on the left side.
    2. In the same dermatomic zone hyperthermalgesia was observed in comparison to the right side. Temperatures below 20 and above 45 C. were used. There was no disturbance in her ability to recognize extreme temperatures on the left side.

September 11, seventy-eight days after the injection:

- A. Epicritic sensibilities.
    1. There was no disturbance in her ability to feel the light touch of cotton wool.
    2. There was no disturbance in her discrimination of temperatures ranging between 20 and 30 C.
    3. Cutaneous localization was unimpaired.
- B. Protopathic sensibilities.
    1. Her reaction to pin prick on the left side was only slightly below normal.
    2. Her ability to discriminate on the left side between extremes of temperature, i. e., below 20 and above 45 C., was greatly impaired. When compared with the right side there was a definite hypothermalgesia.

Conclusion.—1. This patient was injected with a weaker alcohol solution, i. e., 60 per cent.

2. The sensory findings after the injection showed the conductivity of the dorsal nerves to be only slightly decreased as compared with the previous two cases, in which an 80 per cent solution was injected.

3. The patient was free from all pain for fourteen weeks, finally dying from cardiac decompensation.

Case 4.—*History.*—J. W., a man, aged 61, suffering from angina pectoris associated with coronary disease and cerebral thrombosis, had for the past four years been complaining bitterly of precordial pain. At first the distress was brought on by walking two blocks, and caused such pain that he had to pause to rest. As time passed, he observed that walking even much shorter distances induced pain. He described this pain as sticking, tearing and at times constricting in character. These attacks would appear two or three times daily, each lasting from twenty to thirty minutes. For the past eighteen months he had been unable to walk more than 20 yards because of the induced agony. Every morning at about 2 o'clock he was awakened by severe precordial pain persisting from thirty minutes to an hour. He sat up in bed grasping the precordium. Occasionally he had a fear of impending death. June 12, 1925, a paravertebral alcoholic injection was performed. An interesting phenomenon occurred while the patient was on the operating table. He suddenly started to groan with pain, which was localized to the precordium. Accompanying this excruciating agony he became cyanotic. While he was in the throes of this anguish, 5 cc. of 1 per cent procaine solution was introduced paravertebrally into the first and second dorsal nerves. Within thirty seconds pain had completely ceased. Five minutes later 5 cc. of an 80 per cent solution of alcohol was introduced into each of the two dorsal nerves. The next day he walked 150 yards as fast as he could, and although he became alarmingly cyanotic and dyspneic, he definitely asserted that he had no pain. Since the treatment he has been able to walk about comfortably with almost complete absence of precordial pain. He has had no further attacks of nocturnal pain.

Sensory Findings.—June 11, 1925, before the injection:

A. Epicritic sensibilities.
  1. A zone of hypesthesia extended over the entire left side of the chest both anteriorly and posteriorly.
  2. The patient had great difficulty in discriminating differences of 5 degrees of temperature on the left side both anteriorly and posteriorly.
  3. Cutaneous localization was definitely impaired over the entire left side.

B. Protopathic sensibilities.
  1. An area of hyperalgesia extended over the skin segments supplied by the first and second intercostal nerves on the left side.
  2. A zone of hyperthermalgesia was observed on the left side over the first and second intercostal spaces. The patient found no difficulty in discriminating between extremes of temperature over the hyperirritable zones.

Conclusion.—1. Because of attacks of angina pectoris, the chest of a patient suffering from thrombotic process both in the interbrain and in the coronary arteries was examined by sensory tests, which revealed disturbances in the afferent systems conveying impulses to the thalamus. Nevertheless, a zone of hyperalgesia was found over the skin areas supplied by the first and second intercostal nerves on the left side.

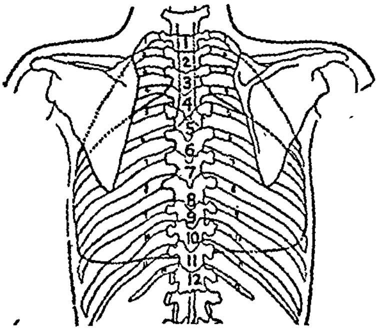

Fig. 4.—Sensory findings before injection.

2. Because of signs pointing to a progression of the thrombotic process in the thalamus, it became quite evident that little information would be obtained by comparing the sensory examination of the chest before injection with that after the injection.

3. No ill effects or complications of any kind following the injections have been observed.

Case 5.—*History.*—N. B., a man, aged 65, suffering from angina pectoris due to coronary sclerosis, had complained of pain over the heart for a period of two years. The pain was chiefly located over the precordium and radiated down the left upper extremity and was described as constricting in nature, and at other times as sticking in type. Often the pain was boring, seeming to penetrate anteroposteriorly. The attacks often occurred two or three times daily. Almost nightly, at about 2 in the morning, he would be awakened by a terrific pain over the precordium, accompanied by a sense of suffocation and a fear of impending death. Venesection was resorted to several times. Morphine relieved him, but amyl nitrite was of little avail. Physical examination showed a greatly enlarged heart with a marked dilatation of the aorta. A paravertebral injection of alcohol was made into the second, third, fourth and fifth dorsal roots, which relieved him of further attacks both day and night. Shortness of breath still persisted on exertion. Since the alcohol injection, the patient has had several attacks of pulmonary edema with absence of pain. Before the treatment was given, these attacks were always accompanied by severe agonizing pain.

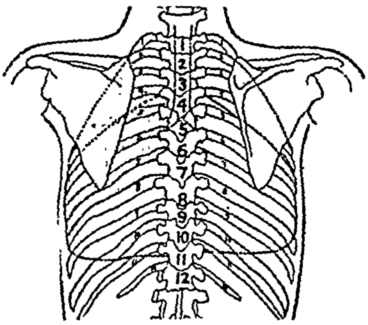

Fig. 5.—Sensory findings before injection.

Sensory Findings.—Sept. 15, 1925, before the injection:

A. Epicritic sensibilities.
  1. A zone of hyperesthesia to cotton wool was found over the skin supplied by the first to the sixth intercostal nerves on the left side.
  2. There was no disturbance in the patient's ability to discriminate temperatures ranging between 20 and 38 C.
  3. Cutaneous localization was well performed.

B. Protopathic sensibilities.
  1. A zone of hyperalgesia extended over the skin supplied by the first to the sixth intercostal nerves on the left side.
  2. There was greatly increased reaction on the left side to temperatures below 20 and above 45 C. He had no difficulty in recognizing these extremes of temperature on the left side.

November 15, sixty days after the injection:

A. Epicritic sensibilities.
  1. There was a marked hypesthesia, which extended over the skin on the left side supplied by the first to the sixth intercostal nerves, respectively. In fact, he hardly perceived the stroking of the cotton wool over the skin.
  2. He was completely unable to discriminate fine differences in temperature; i. e., between 20 and 38 C.
  3. Cutaneous localization was greatly impaired.

B. Protopathic sensibilities.
  1. A zone of hypalgesia practically approaching analgesia extended over the skin segments supplied by the first to the sixth intercostal nerves.
  2. A marked disturbance in his ability to discriminate between extremes of temperature, i. e., below 20 and above 45 C. on the left side, was noted. When the affected area was compared with the right side a definite hypothermalgesia was noted to exist over the former.

Conclusion.—1. Before the injection of alcohol, a zone of hyperirritability existed over the dermatomes supplied by the first to the sixth intercostal nerves. Sixty-one days after the injection, the conducting function of these intercostal nerves was greatly curtailed.

2. There was no return of pain in spite of the continuance of attacks of pulmonary edema. Nov. 19, 1925, he died suddenly during one of these attacks. He had been relieved for a period of nine weeks.

Careful electrocardiographic studies were carried out in detail on all patients before and after treatment both at rest and after exercise. The results are so variable that at present no conclusions can be drawn.

CONCLUSIONS

1. In attempts to relieve angina pectoris by operation, there are dangers and inconsistencies.

2. Five patients were relieved of severe cardiac pain by paravertebral injections of alcohol.

3. The results indicate a new, efficacious, simple and harmless method of alleviating severe cardiac pain.

Gun Hill Road near Jerome Avenue.

Treatment of Tuberculosis.—Open air in the treatment of phthisis should be as complete as possible, and the patient must be inured to it gradually. In particular, it is to be insisted that the patient be exposed to full daylight, unobstructed by glass. This is a very important element in open-air treatment, but sun, unless the air is cold, is safest avoided by patients with active lung disease. A prolonged sunning may lead to undesirable congestion of the tuberculous areas. The effect of open air, and especially of cold air breathed, seems to be a stimulation of metabolism, leading to increased appetite and well being.—Riviere, Clive.

EFFECT OF PARATHYROID HORMONE ON CERTAIN SIGNS AND SYMPTOMS IN TUBERCULOSIS

PRELIMINARY REPORT *

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There has been much speculation as to the relation of calcium metabolism to the healing of tuberculosis. That some relation exists has naturally been suggested by calcification occurring in healed tuberculous lesions; but that calcium alone has a definite influence is questioned, although it has long been advocated in the treatment of tuberculosis. We have in the use of parathyroid hormone, elaborated by Collip,[1] a means for increasing the amount of calcium in the blood and possibly of affecting the calcium metabolism. The present study is concerned with this effect on lesions, and certain features and complications in tuberculosis.

A series of sixty patients in various stages of tuberculosis has been observed for periods ranging from up to a few days to four or five months. A further number of patients with other forms of pulmonary infection have been included in the study for control purposes. This additional series was utilized as a means for noting changes in special signs and symptoms which could not be clearly differentiated in the tuberculous group. It is not our purpose at this time to give more than a preliminary note on the effect of parathyroid hormone, because the patients have not been followed for a sufficient period of time to justify a final statement. There are a number of observations, however, which seem to warrant this preliminary report. In presenting the data, we realize the difficulty of attributing certain phenomena as due exclusively to the medication. Rest in bed, psychic influences and secondary infections at times confuse the real picture of tuberculosis and give a false impression of the progress of the disease. Symptomatic observations should not be the determining evidence of therapy but only suggestive of it. They are mentioned in this report with this feeling in mind. At the beginning of the investigation, an effort was made to rule out the effect of rest as a factor to the progress of the disease by selecting patients who had been under a routine hospital management for a considerable period without improvement. A small number of patients with acute complications on admission were given treatment without delay.

Objective and subjective observations were made at frequent intervals. The objective findings consisted of roentgen-ray observations, blood calcium and blood clotting determinations, strength tests, and laryngeal examinations with a recording of the weight, temperature, pulse rate and blood pressure. The subjective observations were necessarily limited to symptoms that were recorded daily. To prevent the patients from comparing notes, the studies were carried out in separate groups in which no contact was possible, so that the patients could not suggest improvement to one another. There were no changes made in the diets or in the usual routine of treatment. So far as possible all medication was discontinued, with the exception of parathyroid hormone. Special complications, such as hemorrhage, laryngeal involvement, pleurisy and gastro-intestinal disturbances, were relieved when necessary by the usual measures, but were observed specially for any effect that might be attributed to the parathyroid hormone.[2] The hormone was given subcutaneously; the dosage at the start of the investigation was between 10 and 20 units daily. Later, it was found that certain changes occurred in patients in whom the large dosage was used, and this led to reduced dosage of hormone and a plan of treatment which had to do primarily with the clinical signs rather than with the level of calcium in the blood. The Clark and Collip[3] modification of the Kramer and Tisdall method was used in making the calcium determinations. After the first few injections of hormone, the determinations were made every six or twelve hours. When the calcium level was found fairly constant and there were no clinical signs of hypercalcemia, the estimations were made every six days.

CHANGES NOTED AFTER USE OF PARATHYROID HORMONE

Strength.—It was found that a number of patients showed a striking general increase of strength after the first few injections of parathyroid hormone. The strength of grip, as determined by a dynamometer apparatus, also showed a progressive weekly increase. The strength was maintained more constantly during repeated tests every few minutes than before treatment was instituted. There seemed also to be less tendency for the ambulatory patients to tire under moderate exercise. There were several patients, however, who appeared to lose strength during treatment, the strength being regained following the withdrawal of the medication, or if it was given in smaller dosage. Utilizing this information, a later series of patients was given the hormone in smaller dosage, with less striking but generally more favorable results.

Muscular Pain.—It was observed that pain and cramps in the calves of the legs and in other parts frequently disappeared and did not recur after the first few injections. Arthritic pains were less frequently relieved. In two patients, aching in the knee and elbow joints developed during treatment. These symptoms were attributed to the medication because they ceased after the hormone administration was discontinued.

Warmth.—A subjective feeling of warmth was not uncommon, quite often limited to the feet and legs but also noticed in the face and other parts of the body. There seemed to be some relation between the time of administration and the sensation of warmth, the latter appearing at its height in from two to four hours following the hormone injection, regardless of the time of day. The patients, however, stated that they usually felt warmer at all times than they did before the treatment was instituted.

Respiratory Symptoms.—The changes referable to the respiratory apparatus were numerous and varied

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* From the medical service of Dr. Thomas McCrae and the Department for Diseases of the Chest, Jefferson Hospital.

* A part of the expense for this investigation has been defrayed by a grant from a fund in memory of Roland L. Taylor, Jr., of Gwynedd Valley, Pa.

[1] Collip, J. B.: The Extraction of a Parathyroid Hormone Which will Prevent or Control Parathyroid Tetany and Which Regulates the Level of the Blood Calcium, J. Biol. Chem. 63: 395 (March) 1925.

[2] The preparation of hormone used was para thor-mone supplied by Eli Lilly & Company through the kindness of Dr. G. H. A. Clowes and Dr. J. E. Warvel.

[3] Clark, E. P., and Collip, J. B.: A Study of the Tisdall Method for the Determination of Blood Calcium, with a Suggested Modification, J. Biol. Chem. 63: 461 (March) 1925.

widely in different individuals. However, when present, they occurred with remarkable constancy in relation to the dose of hormone and plan of treatment.

A most common symptom was dryness of the throat, which occurred after a total dosage of from 30 to 40 units of hormone, when the calcium was elevated to 13 or 14 mg. per hundred cubic centimeters of blood. The dryness generally continued until a lower dosage of parathyroid hormone was used and the blood calcium level correspondingly reduced.

In five patients with moderately advanced laryngeal tuberculosis, there was some decrease of pain with less difficulty in swallowing after the first or second week of treatment. In some of these patients, however, who developed dryness of the throat there was later an increase of the pain with dysphagia. These symptoms subsided during a reduced dosage of the hormone, except in two patients in whom it was necessary to discontinue the treatments.

It seemed at first that the patients with a productive cough were definitely relieved during the hormone injections. The amount of expectoration was decreased, and it appeared that the tendency to cough was lessened. As the treatment progressed, however, there were several instances of increased coughing which apparently continued until the dosage of the parathyroid hormone was reduced. The patients with a dry, hacking cough were usually more uncomfortable following the first few injections because of increased coughing and curious tickling sensations in the chest and throat. They seemed to expectorate considerable quantities of mucus, which appeared to originate in the throat. These unpleasant symptoms were usually prevented, and there appeared to be considerable general improvement if less frequent injections and smaller dosage of the hormone were used.

In four patients there was marked relief from attacks of dyspnea soon after the administration of 10 units of hormone. The improvement occurred in the chronic fibroid types of tuberculosis with acute respiratory complications.

Pain in the chest, both of muscular and of pleural origin, was often relieved after the first or second day of treatment. This observation is quite fairly open to criticism, because pain occurs and disappears repeatedly without apparent cause. However, the acute pleurisies seemed to respond far more rapidly after the parathyroid hormone injections than following other measures for the relief of pain. Four patients who had been suffering for several days from extremely painful pleurisy, unrelieved by narcotics in ordinary dosage, showed marked improvement within a few hours after the injection of 10 units of parathyroid hormone. There were other instances with less severe pain, but the results were nevertheless striking.

The observations on the respiratory symptoms emphasize the importance of carefully noting daily changes in the patient's condition. It was possible to increase the comfort of the patient by giving the parathyroid hormone, but if the dosage was excessive, or if the intervals between injections were not sufficiently long, the former symptoms were apt to return quickly with aggravation. The dryness in the throat and irritative coughing were especially characteristic of overdosage.

Gastro-Intestinal Symptoms.—The immediate effect of the parathyroid hormone on gastro-intestinal symptoms was not remarkable. There seemed to be a slight tendency toward constipation, which was marked in two instances. There was generally an improved appetite after the first week of treatment. There was no definite effect on abdominal pain or other discomfort. An insufficient number of patients with intestinal tuberculosis has been followed to warrant a statement on the effect of the hormone in this condition.

Hemoptysis.—In the objective findings, the outstanding clinical observation was the control of pulmonary hemorrhage. It is fully realized that rest in bed and sedatives in the majority of instances control hemoptysis, but there are many patients who do not satisfactorily respond to this form of treatment, and if there is response it is tedious and unreliable. Repeated hemorrhages are common, and there are often long periods of blood spitting. It was the latter group (twenty-four patients), with a history of frequent hemoptysis unrelieved permanently by the usual measures, that was selected for this study. It was the plan in the early work to give sufficient parathyroid hormone to maintain a high blood calcium, but this was modified when it was noted that hemoptysis recurred in three patients, although an elevated calcium level was maintained. In the subsequent treatment of pulmonary hemorrhage less hormone has been used with more satisfactory results. There have been nineteen patients without recurrence in two months. In general, patients with marked hemorrhage have been given from 30 to 40 units of parathyroid hormone in two divided doses during a period of thirty-six hours. This dosage was then followed by injections of 10 units of the hormone every second day for two or three weeks. In the patients with only moderate blood spitting, 10 units of the hormone has been given every third day for five or six doses, when the administration was further reduced. It has been felt that if parathyroid hormone, used according to this plan, does not control pulmonary hemorrhage, it is futile to increase the dosage because the results would probably be unsatisfactory. At present we regard the undesirable patients for treatment as those with hemorrhage due to bronchiectasis and pulmonary abscess, and those with very frank hemorrhage conceivably due to large vessel erosions.

Laryngeal Tuberculosis.—The favorable effect of parathyroid hormone in tuberculous laryngitis was much less constant than the effect on pulmonary hemorrhage. It was noted, however, by Dr. R. M. Lukens that in five patients there was a reduction of the edema and swelling of the arytenoids and glottis during treatment. In one instance there was striking evidence of improvement in the lesion. Dryness of the throat often occurred when a large dosage of the hormone was given. This caused not only a marked aggravation of the local symptoms, but also further changes in the laryngeal structures, apparently because of the increased irritation and cough which the dryness provoked. These changes were usually promptly relieved after discontinuing treatment or reducing the dosage of hormone.

Pleural and Pulmonary Râles.—Five patients with acute pleuritic pain were studied after the injection of parathyroid hormone, and three showed marked decrease of the friction sounds within a few hours after the administration of 15 units of hormone. There was also a striking decrease in the pulmonary râles which occurred during superimposed respiratory infections. It was noticed also in several patients that râles *occurring in active tuberculous processes lessened during treatment.*

Blood Pressure, Temperature and Pulse Rate, and Weight.—The blood pressure (hypotension is commonly found in tuberculous patients) was unaffected by the parathyroid hormone injections. The temperature and pulse have varied apparently only with the activity of the disease. After a period of high and frequent dosage, it was not uncommon for the temperature to show marked evening elevations often accompanied by chills. It cannot be certain that these periods of activity would not have occurred without medication; nevertheless, they were present so often during high dosage of hormone as to suggest that the extract was at least playing a part in the phenomenon. This reaction also occurred in the far advanced cases under comparatively small dosage and has always been the signal to reduce the amount of hormone. At present there seems to be no direct stimulating effect of the hormone on the mechanisms that control the temperature and pulse, but it is possible that the tuberculous process may be affected, which in turn affects the temperature and pulse rate. The gain in weight has varied with the general condition of the patient.

LABORATORY FINDINGS

The routine laboratory procedures have shown in most instances a typical rise in the blood calcium following the injection of from 10 to 20 units of parathyroid hormone. This rise has usually occurred within twelve hours after administration and has shown an increase of 2 or 3 mg. of calcium above the normal level of from 9 to 11 mg. per hundred cubic centimeters of blood. In most patients, it has been possible to maintain a calcium level of between 12 and 14 mg. per hundred cubic centimeters of blood during the daily injection of from 10 to 20 units of hormone. There have been a few instances of irregular response. In two patients a lowered calcium level persisted for several days during the first administration of hormone before an elevation occurred. In other instances there was a transient fall lasting for a few hours after the first administration before a sharp rise in the calcium level to above normal occurred. A transient reduction in the clotting time of the blood (from one to three minutes) has been noted in a few patients during a period when the calcium was first elevated to from 12 to 14 mg. per hundred cubic centimeters of blood. No striking change in the clotting time has been observed when a small dosage of parathyroid hormone has been used.

ROENTGEN-RAY OBSERVATIONS

Roentgenograms made by Dr. J. T. Farrell, Jr., have been essentially negative so far as calcification is concerned. There have been no areas of increased density in the lung fields which can be attributed to a calcifying effect of parathyroid hormone. A number of the patients showed a clearing of the lung fields which seemed to be more rapid than would ordinarily be expected from the usual treatment. However, there were other patients who showed just as striking change in the reverse order. For the present the roentgen-ray observations have not been striking, except for the absence of calcification in patients given hormone daily for a period of three months and in other patients given less intensive treatment for over four months.

COMMENT

In considering the possible value and harmfulness of parathyroid hormone in tuberculosis, it is to be emphasized that the findings are only suggestive. The uncertain nature of the disease requires caution in drawing hasty conclusions. Furthermore, there is no final evidence at this time to justify a single claim for a specific curative effect. The evidence is largely clinical, and therefore must be considered with extreme and careful criticism. It appears that the hormone has a favorable action on certain signs and symptoms, notably cough, dyspnea, hemoptysis, pleurisy and pulmonary congestion. The mechanism for these phenomena is uncertain. It is not unlikely that the improvement is influenced by some change in the utilization of calcium, the result at first being due to a simple dehydration which removes or lessens exudation. This possibility is suggested particularly in the observations on pleurisy and pulmonary congestion in which the râles are reduced during therapy. The reduced clotting time of the blood may have some influence in the control of pulmonary hemorrhage. There may also be an effect of calcium on the plasma membrane or in the blood lymph vessels which results in lessened permeability. Such possibilities are not merely speculative; they are suggested largely through the action attributed to calcium[4] and the knowledge that this important salt is necessary for certain chemical and physiologic activities in the body. The presence of a parathyroid dysfunction in tuberculosis is unproved, but this gland undoubtedly exerts some influence on calcium metabolism. This influence is true also of an active parathyroid hormone. The danger and possible failure in such therapy appears at the onset to be in overdosage by causing an excessive elimination, the formation of certain chemical products, or the disturbance in equilibrium of important mineral salts. A recent editorial in THE JOURNAL[5] calls attention to the possibilities or harm that may be produced by parathyroid hormone. THE JOURNAL refers to the work of Greenwald and Gross,[6] who have demonstrated the behavior of certain salts, particularly their increased excretion, following the use of this hormone. It is a timely warning that a preparation so potent should be used with discrimination. Furthermore, aside from the possible danger from this hormone, there may be a failure to obtain certain favorable effects by overdosage. This failure is emphasized in the treatment of pulmonary hemorrhage in which hemoptysis is controlled during the first hours of therapy, but returns if large dosage of the hormone is continued, although an increased blood calcium level has been maintained. There are no data at this time to suggest that the utilization of calcium depends on an increased amount of calcium in the circulating blood. There is furthermore no suggestion in the roentgen-ray observations to show that calcification depends wholly on an elevated blood calcium. These observations at least favor the impression that overdosage is useless if not actually harmful —harmful, because the normal storage of calcium in the body may be depleted, and areas of disease undergoing repair may also be so affected.

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[4] Sollmann, Torald: A Manual of Pharmacology, Philadelphia, W. B. Saunders Company, 1920, p. 683.

[5] The Parathyroid Hormone—a Warning, editorial, J. A. M. A. **86**: 351 (Jan. 30) 1926.

[6] Greenwald, Isadore; and Gross, Joseph: The Effect of the Administration of a Potent Parathyroid Extract on the Excretion of Nitrogen, Phosphorus, Calcium and Magnesium, with Some Remarks on the Solubility of Calcium Phosphate in Serum and in the Pathogenesis of Tetany, J. Biol. Chem. **66**: 217 (Nov.) 1925.

A detailed consideration of the prolonged use of parathyroid hormone in tuberculosis is not within the scope of this report, because an insufficient number of patients have been observed for a long period of time. At present, however, it seems that the dosage should be governed largely by the signs and symptoms and the type and extent of the disease. It is obvious for various reasons not to expect a favorable effect in the chronic or actively progressive forms undergoing caseation and cavity formation, except possibly to relieve certain complications. There appears to be a more suitable use in those patients with so-called exudative processes and hemorrhage, pleurisy and associated pulmonary infections. In the selected patients without special features, the most constant improvement has been noted during the administration of from 5 to 15 units of hormone once or twice weekly. This dosage has been supplemented by additional hormone in the treatment of special symptoms or complications. The study has emphasized the importance of noting daily changes in the patient's condition not only because of relief that may be obtained in complications, but also for the prevention of ill effects, especially increased coughing in certain types, dryness of the throat, fever and elevated pulse rate which may occur during overdosage. Care should always be used to prevent overdosage.

SUMMARY

1. To a series of sixty tuberculous patients, parathyroid hormone injections were given to determine the effect on certain signs and symptoms common to this disease.

2. There was improvement in the strength, increased warmth, and lessened muscular and pleuritic pain. In some instances, there was also a favorable effect on laryngeal tuberculosis.

3. The effect on cough was variable; the dry hacking cough was often aggravated; the productive coughs were often less troublesome during treatment, and there was decreased expectoration. There was a favorable effect on dyspnea.

4. The most striking objective feature was in the control of pulmonary hemorrhage. This was relieved quite constantly, according to a plan of treatment outlined. There was also a decrease in the edema of the arytenoids and other structures involved in laryngeal tuberculosis, with some evidence of healing. In pleurisy and pulmonary congestion there was evidence of decreased râles following the administration of the parathyroid hormone.

5. In the roentgen-ray examination, there was a suggestive clearing of the lung fields, but no evidence of calcification.

6. In general there was a favorable effect on the condition of the patients, as shown by increase of appetite, gain in weight, and lowered temperature and pulse rate.

7. The untoward features were arthritic pains, dryness of the throat, increased coughing, palpitation, weakness, and periods of elevated temperature and pulse with loss of weight and appetite, and were usually due to overdosage. These phenomena were generally relieved following the withdrawal of the medication, and seldom reappeared during moderate dosage.

8. There appears to be no evidence that a favorable effect on pulmonary tuberculosis is obtained from maintaining a high calcium content in the circulating blood.

1832 Spruce Street.

THE FEMALE SEX HORMONE

IV. ITS OCCURRENCE IN THE CIRCULATING AND MENSTRUAL BLOOD OF THE HUMAN FEMALE: PRELIMINARY REPORT *

ROBERT T. FRANK, M.D.
AND
M. A. GOLDBERGER, M.D.
NEW YORK

Independently, and almost simultaneously, Loewe[1] and one of us, together with collaborators[2] demonstrated the presence of the female sex hormone in the circulating blood. This observation is the first demonstration by means of a specific and direct test of the presence of a true hormone in the circulation.

The test employed is the change from leukocytes to squamous epithelium noted in the vaginal smear of castrated rats and mice.[3]

In this short preliminary report, no retails as to method and technic will be given.

We have obtained the female sex hormone from the blood specimens by means of lipoid extraction performed under identical conditions by identical methods. The results are sufficiently concordant to be considered quantitative. Blood has been obtained from thirty-eight patients. In some instances, specimens have been taken at intervals of from five to seven days through two monthly cycles from the same patient.

From our investigation it has become evident that:

1. The amount of female sex hormone found in the circulating blood of the human female varies during the menstrual cycle. An abrupt increase takes place beginning between the tenth to the fifteenth day counted from the first day of the last menstruation.

2. The female sex hormone is present in greatest concentration in the circulating blood near the first day of menstruation.

3. With the onset of menstruation, the female sex hormone abruptly diminishes in the general circulation.

4. The female sex hormone appears in the menstrual blood, there being present in from triple to six fold the concentration found in the circulating blood.

5. In certain types of menorrhagia and metrorrhagia, the female sex hormone may be (*a*) absent from both the circulating and the uterine blood; (*b*) in others, present in both the circulating and the uterine blood.

6. In certain amenorrheas, an increase in amount of the female sex hormone may be demonstrated in the circulating blood.

From these observations we feel justified in concluding that:

(*a*) The female sex hormone secreted by the maturing follicle reaches the general circulation.

(*b*) The sudden increase of female sex hormone found from ten to fifteen days after the last menstruation may be used approximately to determine the time of ovulation.

(*c*) The female sex hormone secreted by the corpus luteum likewise reaches the general circulation, continuing the pregravid stimulation of the genital tract and breasts as demonstrated by other methods in a previous communication.[4]

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* From the Pathological Laboratory and Gynecological Service of Mount Sinai Hospital.

1. Loewe, S.: Klin. Wchnschr. **4**: 1407 (July 16) 1925.

2. Frank, R. T.; Frank, M. L.; Gustavson, R. G., and Weyerts, W. W.: Demonstration of the Female Sex Hormone in the Circulating Blood, I, Preliminary Report, J. A. M. A. **85**: 510 (Aug. 15) 1925.

3. Stockard, C. R., and Papanicolaou, G. N.: The Existence of a Typical Oestrous Cycle in the Guinea-Pig, with a Study of Its Histological and Physiological Changes, Am. J. Anat. **22**: 225 (Sept.) 1917.

(*d*) During the pregravid stage, either (1) a concentration and storage of the female sex hormone takes place in the uterine tissues, or (2) the uterine mucosa at the time of the menses filters out the female sex hormone from the circulating blood.

(*e*) Two types of menorrhagia or metrorrhagia occur, the one with oversecretion, the other with undersecretion of the female sex hormone. Further study may enable us to elaborate proper forms of treatment based on the etiology.

(*f*) Some amenorrheas may be due to persistence of the corpus luteum, as evidenced by a persistence and undue concentration of the female sex hormone in the circulating blood.

These studies are being continued and elaborated with every prospect of affording valuable aid in both diagnosis and therapy.

10 East Eighty-Fifth Street—206 West Eighty-Sixth Street.

Clinical Notes, Suggestions and New Instruments

A CASE OF MALTA FEVER *

Henry S. Acken, Jr., M.D., Brooklyn

R. G., a minister, aged 39, admitted to the service of Dr. Kandt, Nov. 30, 1925, complaining of headache over the eyes and soreness of the abdomen of five weeks duration, had been treated at his home in New York State during the previous five weeks. The family and past histories were negative. The illness really began about the first of September, 1925, when the patient began to have a feeling of persistent fatigue and weakness. November 4, he had his first known rise of temperature to 101. This dropped during the following week but rose again on the 9th to 102, when he had a chill and profuse sweat, together with persistent headache and abdominal soreness. A tentative diagnosis of typhoid was made by his family physician, but the Widal test was returned as negative. By November 16, the temperature had reached normal, but a week later the patient was forced to go to bed on account of extreme weakness. November 27, the temperature rose to 103, and he complained of weakness, profuse sweat and chills. He entered the hospital three days later; his temperature on admission was 103.

The patient was large and well proportioned, with no abnormal physical signs except a temperature of 103, flushed face and generalized abdominal tenderness. The spleen was not felt. The systolic blood pressure was 120; diastolic, 78. The blood picture was remarkable only in that the leukocyte count was 8,600, with 60 per cent polymorphonuclear cells and 40 per cent mononuclears. A blood count had been taken at home, November 14, which had shown a leukocyte count of 7,600 with 37 per cent polymorphonuclears, and 59 per cent small and 3 per cent large mononuclear cells. The Wassermann and Widal reactions, stool culture, malarial smear, and roentgenograms of the teeth were all negative; the blood culture was sterile and the urine normal.

During the patient's residence at the hospital, the pulse was never above 108 and respiration never above 25. The temperature came down gradually, reaching normal after six days. Nothing remarkable was noted in the convalescence. December 11, the patient was discharged without diagnosis. His temperature had then been normal for about a week. After his return home he still felt weak and his "nerves were shattered." December 16, his temperature rose to 99 and December 18, it was 103.

The patient was readmitted to the hospital on this date, and the physical findings were as before. The blood picture, however, showed a leukocyte count of 7,000, with 26 per cent polymorphonuclears, and 4 per cent large and 70 per cent small mononuclear cells. It was on this second admission that a tentative diagnosis of Malta fever was made, and the search was started for the organism in the blood stream, but was negative. Jan. 5, 1926, a culture of *Micrococcus melitensis* was obtained through the courtesy of Dr. Chester Keefer of Johns Hopkins Hospital. Prior to this, however, cystoscopy and roentgenograms of the chest and sinuses had all proved negative.

The course was similar to that of the previous admission, and the patient became afebrile after nine days, December 25. However, January 5, an agglutination test was done by Dr. Smith, using the culture of *M. melitensis* and the technic as described by Dr. Keefer. This showed a positive agglutination in dilution of 1:800, while a control serum was entirely negative. Subsequent study of the blood picture showed a gradual increase in the polymorphonuclear count and a decrease in the small mononuclear count, with a practically constant leukocyte count; the blood picture became normal, January 3, The patient was discharged, January 10, slightly weak and nervous, after about seventeen afebrile days. He has remained well since.

SUMMARY

Three known periods of pyrexia (up to 103), characterized by headache, abdominal soreness, weakness, chills and sweats and no joint pains occurred in this patient. The physical findings were negative. The spleen was never palpable. There was a lymphocytosis, with the blood picture gradually returning to normal. Positive agglutination with *M. melitensis* and the closely related *B. abortus* was obtained. Recovery was spontaneous without specific treatment.

CONCLUSION

It may be said that while Malta fever is thought to be restricted to the island which gives it its name and to southern Europe, several cases have been reported that show it to be endemic in the United States. It should be considered and eliminated as a possibility in obscure fevers.

Seventh Avenue and Sixth Street.

INDUSTRIAL POISONING FROM LOW CONCENTRATIONS OF CHLORINE GAS *

Carey P. McCord, M.D., Cincinnati

The recent advocacy of chlorine in the treatment of respiratory infections has tended to create the belief that industrial poisoning from low concentrations of this gas is improbable. The concentration of chlorine recommended for therapeutic purposes approximates 0.015 mg. per liter of air. This concentration is fairly close to that present in the bleach rooms in paper mills, laundries and textile mills. Barring accidents, it is believed that chlorine concentrations in such industries range downward from 0.03 mg. per liter of air. Apart from minor inconveniences, such low concentrations will not produce any acute harmful effects. When, however, exposure is continued over a period of years, an occasional worker may be expected to become severely harmed. Such an instance is cited below.

REPORT OF CASE

History.—L. R., white laborer, began employment in a paper mill in 1920. His work, family and personal history up to that time were without significance. At his place of work it was a trades practice to place many-colored, waste paper stock into tanks, together with a solution of commercial "bleach powder" for the purpose of whitening this paper stock. The bleach powder contained about 35 per cent available chlorine. After the bleach treatment the excess fluid was drained off, and the treated stock was dumped from the tanks into a cellar room. The patient's occupation consisted of digging out this paper stock from the drainer room, loading it on hand trucks and transporting it to another room. According to the patient, an odor of chlorine was present at all times but at certain times appeared to be more concentrated. He knew of no accident that led to gross exposure to chlorine.

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[4] Frank, R. T., and Gustavson, R. G.: The Female Sex Hormone and the Gestational Gland, J. A. M. A. 84: 1715-1719 (June 6) 1925.

* From the Medical Service of the Methodist Episcopal Hospital.

* From the Industrial Health Conservancy Laboratories.

In 1924, he first noticed a slight cough, associated with sneezing and burning in the eyes. During this period, there were intervals of a week or two in which he noticed no discomfort. Then the coughing would return for a period of several days. Progressively, the coughing became more severe.

By February, 1925, the condition had become severe, and pain was continuously present in the upper portions of both lungs, but particularly in the right. A bronchitis had developed. During this month and the spring months, the patient consulted his family physician on several occasions. A diagnosis was made of pharyngitis and laryngitis. Although extensive treatment was carried out, no betterment took place. The physician advised discontinuance of work in chlorine. This was not done.

The condition of the patient remained about the same until August, 1925, when it became worse. At that time the patient was dyspneic; he had a feeling of oppression in his chest; the pain in the lungs had increased and the coughing and bronchitis were marked. During September, 1925, he was forced to discontinue work and go to bed. His chief complaints at that time were incessant coughing, severe pain in the chest, sore throat, spitting up blood and the feeling of "a belt around the chest." He was confined to the bed or the room for five weeks. November 9, he attempted some work that did not involve exposure. He has not been able to resume full work up to this time. March 11, 1926, he was referred to us because of shortness of breath, bronchitis, and inability to work. When he entered the room it was obvious that he was dyspneic, undernourished, and suffering from almost continuous coughing

Examination.—The pupils were equal, reacting promptly to light and in accommodation. Ophthalmoscopic examination showed the arteries not contracted, the veins not particularly dilated, and no retinitis or hemorrhages. The teeth were in only fair condition; with marked caries. The gums were retracted from the base of the teeth and the whole picture was one of erosion. The voice was markedly husky. The posterior pharynx and tonsils were clean. The epiglottis was normal and the piriform fossae were clean. The arytenoids and the intra-arytenoid area were red and the membrane thickened, but there was no ulceration. No paralysis of the cords was seen but there was some thickening, without deposits or ulcerations.

The thyroid was just palpable. It is noteworthy that the superficial veins over the thyroid were all distinctly enlarged.

Heart: R. C. D. 3.2 x 9.5 cm. The point of maximum impulse was visible and palpable in the fifth space, 9 cm. to the left. R. S. D. 6 cm. There was no dilatation of the aorta. The first sound was slightly reduplicated at the apex, but there was no definite murmur. At the base the second aortic sound was slightly louder than the second pulmonic, but it was not ringing. The cardiac rate was 100. There was no deficit. The vessel walls were not thickened. The pulse was not of high tension. The systolic blood pressure was 132; diastolic, 80.

Over the upper left lung the note was definitely hyperresonant. It was slightly exaggerated even on the upper right side but not as marked as on the left side. Posteriorly the note was hyperresonant on the right side, especially at the base, and continued clear to the twelfth dorsal spine. Respiratory motility was markedly diminished, not extending more than 1.5 cm. on either side. On auscultation the breath sounds in places were harsh, especially on expiration, but at the bases the sounds were distant. There were occasional dry râles, the picture being that of a low grade bronchitis with emphysema. There were rather more râles anteriorly, especially toward the base, but they were dry. The speaking voice was not changed. The whispering voice was much diminished. At the base posteriorly the whispering voice did not come through. The superficial vessels along the costal margin were distinctly injected, running around the axilla on either side. The liver edge was felt three finger breadths below the costal margin, but the liver dulness above did not begin until below the sixth rib.

Roentgen-ray examination showed an old tuberculosis of the upper right lung, with fibrosis in the upper left lung. There was an old healed cavity in the upper right lung. Marked emphysema of both lower lobes was present. The intracostal spaces were increased, and the density of the lung tissue was definitely diminished throughout the lower lobe of both lungs.

We accept this patient's condition as an occupational disease due to prolonged exposure to low concentrations of chlorine gas arising from work processes.

34 West Seventh Street.

CASE OF LEAD POISONING WITH ONSET SIMULATING TRIGEMINAL NEURALGIA [*]

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Fellow in Medicine, Lakeside Hospital and Western Reserve University School of Medicine

This case is reported because it presented a difficult problem in diagnosis and because the character and sequence of symptoms are considered sufficiently rare to arouse interest.

A Croatian, aged 44, occupied as a general laborer in a nearby shipyard, came to the dispensary, Jan. 13, 1925, for relief from excruciating pains, of three weeks' duration, in the right side of the face. He had been perfectly well until Christmas Day, 1924, when suddenly he experienced in the right side of the face a severe, burning pain. He described this as a "hot, jumping toothache in every tooth in the right side." It lasted all day, with severe acute exacerbations, and was so severe at night that he was unable to sleep. During the night he noticed that he began to have intermittent pains in the right arm, originating in the shoulder and radiating down the posterolateral aspect of the arm as far as the elbow. These pains were not as severe as those in the face. The pains in both regions continued similarly for three weeks. During this interval the patient, thinking it was all due to his teeth, went to the dentist, who had recently filled a few small cavities. One upper molar was considered to be suspicious and was extracted. As this produced no relief, the patient was referred to the hospital.

He said that he did not have any contact with lead but that he did painting jobs at irregular intervals, the last job more than two months before the onset. There had been no injuries or periods of exposure to cold, and no recent infections could be recalled. No additional useful information could be obtained.

The temperature and pulse were normal. Critical examination of the head failed to reveal any source of pain. The skin, eyes and ears were normal. The teeth were clean and in excellent condition. The first upper right molar was missing. There was no lead line, no pus in the nose, and no tenderness over the sinuses. The tonsils appeared normal. Two points of tenderness were found, one just anterior to the right tragus and another over the site of the upper right third molar tooth. Slight tapping of any of the teeth in either jaw on the right side caused severe pain. There was exquisite tenderness over the upper third of the right humerus, especially over the course of the musculospiral nerve. There was no atrophy of the face or arm muscles; no loss of power; no gross sensory changes to light touch, pressure, heat, cold, pain, vibratory or tactile discrimination tests, although there seemed to be some vague quantitative difference between the two sides, and no tenderness over the brachial plexus.

Roentgenograms of the teeth and of the region of the right shoulder joint were normal.

The hemoglobin was 90 per cent (Tallqvist).

The specific gravity of the urine was 1.004; there was no albumin, sugar or sediment.

The patient was given codeine sulphate, 0.015 Gm., acetphenetidin, 0.13 Gm., and acetylsalicylic acid, 0.33 Gm., in capsules, every four hours, for the pain and told to report in one week.

January 20, one week later, the condition was much the same. He still spent a large part of every night walking the floor. Examination showed slight atrophy of the extensor muscles of the right forearm, with preservation of the supinator longus. No loss of power could be detected. There was no apparent atrophy of the right masseter. The character of the atrophy of the right forearm suggested lead neuritis, and the diagnosis was made tentatively in spite of the negative history.

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[*] From the Department of Medicine of Lakeside Hospital and Western Reserve University School of Medicine.

Blood smears were made and stained at once. These showed large numbers of cells containing the characteristic stippling. In a thin blood film they averaged 4 to 5 to each oil immersion lens field. Almost all the red blood cells showed a moderate achromia of the central area.

A few more pointed questions to the patient brought out the fact that although he had not been painting he had been mixing large amounts of lead paint for other men, using both white and red lead oxides almost daily for the past eight months. He said that he did not know that the pigments were made of lead and had taken no precautions to prevent inhalation of the dust.

The gums still showed no lead line. Although the urine was not analyzed for lead, the true history, the evidence for secondary anemia, the findings of large numbers of stippled cells and the character of the muscular atrophy were considered sufficient to establish the diagnosis of lead poisoning. The patient was instructed to take potassium iodide, 5 grains (0.3 Gm.), twice a day and put at rest for a month.

During the latter part of January he reported having had abdominal cramps on several different days and noted that constipation had gradually come on.

February 4, he was examined in the clinic by Dr. Charles F. Hoover, who noted atrophy of the extensors of the right forearm, with preservation of the supinator longus; slight atrophy of the triceps, supraspinatus and latissimus dorsi on the right side; no involvement of the rhomboids, serrati, deltoids and sternocleidomastoids; slight protrusion of the tongue to the right and fine fibrillary twitchings; teeth and gums clean; no lead line; some subjective qualitative difference in tactile perception between the two sides of the face.

By the middle of February the patient had had pain in the left arm and forearm with atrophy of the abductor indicis of the left hand. The atrophy of the right forearm and hand had increased, but there was no atrophy of the masseters. By the middle of March there was both palpable and visible atrophy of the right masseter. The strength of the right hand and arm was markedly reduced, and there was slight impairment on the left side. There had been no pain for almost a month.

Nov. 24, 1925, there were no neuritic pains, and no colic. The strength of both forearms and of both hands was still subnormal. There was persistent weakness of the extensors of the wrists and fingers, greater in the right side. The right masseter was still smaller than the left. The atrophy of the muscles of the forearms was much less than at the time of the previous visit. It was bilaterally equal and would not readily be noticed. The patient had worked steadily since the first of April and had been comfortable.

In February, 1926, fourteen months after the onset, the patient reported himself perfectly well. He had worked steadily for eleven months and was entirely free from symptoms.

COMMENT

The location of the pain, the patient's description of its character, the homolateral radiation to the arm and the Valleix points of hypersensitivity seemed at first to indicate a diagnosis of tic douloureux of the neuritic type. The entire absence of premonitory symptoms, of vasomotor, secretory and trophic disturbances, and the absence of a tic or other motor phenomena seemed to render such a consideration improbable, but it was not until the characteristic atrophy of the arm appeared that the diagnosis of trigeminal neuralgia finally could be abandoned.

In the literature on lead poisoning there are several reports of cranial nerve palsies due to lead. All of these have been painless pareses or paralyses. I have not been able to find any reference to lead neuritis involving the trigeminal nerve, of either the motor or the sensory divisions.

PECULIAR COMPLICATION OF APPENDICITIS

Richard Terrell Davis, M.D., Warsaw, Va.

In clean appendectomies, a routine investigation of subjacent tissues is strongly urged as the part of wisdom. The following is a case in point:

R. M., a youth, aged 16, whose previous health had been good, was taken suddenly ill early in the morning of Aug. 7, 1925. He evinced severe pain in the abdomen, centering at the umbilicus, together with constant nausea. He attributed his symptoms to having eaten largely of watermelon the evening before. I saw him for the first time at 10:30. His expression was anxious; the abdomen was normal in contour but with some rigidity of both rectus muscles. He complained of pain in the umbilical region, and of tenderness on deep pressure at McBurney's point. He experienced almost equal tenderness slightly above the umbilicus. The temperature was 99.8; pulse, 94; respiration, 22. The heart was normal. The urine had some albumin and a few hyaline and granular casts. The total leukocyte count was 14,000; polymorphonuclears, 93 per cent. The patient was hurried to the hospital, where I operated on him at 2 p. m. A right rectus incision was made and I found a very long, somewhat swollen appendix with a few adhesions, and engorgement of the adjacent mesenteric vessels. The appendix was removed in the usual way.

Its condition, however, did not seem to me sufficiently involved to account for the severity of the patient's symptoms, so I investigated further. At a distance of about 30 cm. from the ileocecal valve, I found on the ileum a Meckel's diverticulum. This diverticulum was 5 cm. long, and 1.8 cm. broad at its base, with a wooden toothpick lying in it parallel to its long axis and perforating its apex; 1.2 cm. of the toothpick extended outside the perforation and impinged on an adjacent coil of intestine, through the serous and muscular coats of which it had cut. I removed the diverticulum with the toothpick in situ, repaired the injury to the adjacent intestine, poured 60 cc. of 0.5 per cent solution of merurochrome-220 soluble into the abdominal cavity, and put in a cigaret drain, which was removed the next day. The patient made an uneventful recovery and left the hospital in eight days.

COMPLETE COURSE OF EVENTS IN FRACTURE OF THE BASE OF THE CRANIUM[*]

E. L. Hanson, M.D., Louisville, Ky.

This case beautifully illustrates the basal syndrome. Within forty-five minutes of admission into the hospital, the patient passed through the complete classic sequence of events for basal fracture.

E. R., a white man, aged 22, well developed and well nourished, was admitted to the hospital as an emergency patient, Jan. 3, 1926, suffering from a scalp laceration above the right ear, sustained as a result of being struck by a street car. On examination, a hemorrhage from the right ear into the nasopharynx was found. The patient was semiconscious; there was emesis of the sanguineous gastric contents; the pulse was 85, respiration 24, but not stertorous, and the pupils in midcontraction, responding well to light. The blood pressure was 130 systolic and 70 diastolic, and there was no motor paralysis present. A lumbar puncture revealed hemorrhagic spinal fluid under moderately elevated pressure.

Within twenty minutes of admission and almost immediately following the lumbar puncture, the patient lapsed into deep coma, from which it was impossible to arouse him; the pulse slowed to 60, respiration became deep and stertorous, the right pupil became dilated and fixed, and the blood pressure was 155 systolic and 25 diastolic.

Ten minutes later the patient developed cyanosis, which gradually deepened; the pulse was only 50; respirations slowed until they assumed the Cheyne-Stokes type, the right pupil remained fixed, while the left was now in middilatation, following in sequence the course of the right; the pulse began to quicken and a spinal puncture showed almost undiluted blood under excessive pressure. A transient spastic left hemiplegia was observed, followed shortly by a spastic diplegia. The respiration at this time consisted of long periods of apnea followed by irregular gasping, during which the patient was completely cyanosed. The pulse became increasingly rapid, passing 160 at one time, after which it became irregular but persisted for five minutes after respiration had entirely ceased. From the time of the second lumbar puncture, the needle was kept intact for continuous drainage, and the head of the bed left radically elevated.

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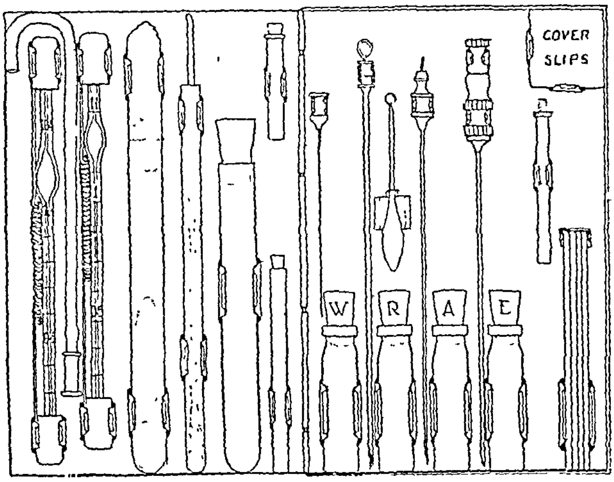
[*] From the division of surgery, Louisville City Hospital, affiliated with the University of Louisville Medical Department.

A USEFUL DIAGNOSTIC AID CASE

Harry D. Piercy, M.D., Cleveland

This pocket case contains a number of clinical diagnostic aids that are often required in an emergency and are not as a rule carried in the physician's bag. The delay and inconvenience caused when I have been compelled to return to the office for some of these articles led me to design and make this compact case, which fits into my bag and is always at hand when needed. Its convenience and usefulness has been demonstrated many times, and I feel that it merits this description.

The case, of German silver, is hinged on one side and opens into two halves. It measures 10 by 15 by 3 cm. and weighs, with its contents, about 425 Gm. It contains the pipets for making blood counts; glass cover slips for blood smears; glass slides for blood or pus smears; a blood agar slant with sterile swab; a sterile test tube for blood or other fluid; hypodermic vials, containing, in one, calcium oxylate, and, in the other, sealed capillary tubes for formaldehyde; four 8 cc. glass vials containing, respectively, diluting fluid for white and for red cells, alcohol and ether; several needles for venipuncture and lumbar puncture, and a blood lancet.



Diagnostic aid case.

The cover slips are contained in the small square box seen in the upper right hand corner. The culture tube here illustrated, made by the Digestive Ferments Company of Detroit, happens to be just the proper size to fit into this case. The spring clips securely sealing the ends of the blood pipets are of obviously simple construction and should be obtainable from any supply house. The articles are securely held in place by nickel plated spring clips of phosphor bronze, soldered to the top and bottom of the case.

8314 Euclid Avenue.

Mitral Stenosis in Women.—The occurrence of "pure mitral stenosis" in women who give no history of any illness prior to the development of cardiac symptoms has always been a puzzling fact, and remains so today.—Sir Thomas Horder, *Brit. Med. J.*, April 3, 1926.

Special Articles

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1625)

TUBE ADMINISTRATION

STOMACH TUBE ADMINISTRATION

Gavage.—In certain diseases and emergencies, feeding and drug administration by stomach or duodenal tube may become necessary. When, for instance, the patient is unconscious, or for one reason or another unwilling or unable to swallow, food as well as medicine may be placed in the stomach by means of a tube, a procedure known as gavage. Under these circumstances, it is usually easier to pass the tube through the nose than through the mouth. It is less apt to enter the trachea, and the mouth does not have to be pried and kept open by instruments. A tube the diameter of a no. 20 French catheter is employed. For infants, a no. 10 catheter suffices. For adults, the tube should be more than 45 cm. long, as, for example, a duodenal tube; and, if difficulty is encountered in its passage, it may be stiffened for introduction by means of a piano wire, which is withdrawn after the tube has reached the stomach. The tube, well lubricated, is slowly passed through the nostril, the patient's breathing being watched for evidence of embarrassment, coughing or choking. Under no circumstances should fluid be introduced into the tube if a respiratory air current can be heard or felt at the end of the tube. It is wise to withdraw, by means of a syringe, a little of the gastric contents to make certain that the tube has reached the stomach. Lavage may often be practiced at this point with advantage, so as to clear the stomach of stagnating food and mucus.

For the introduction of fluid into the stomach, the barrel of a 15 to 20 cc. glass syringe furnishes a readily available funnel that fits these small tubes. As the procedure is unpleasant and somewhat of a strain to the patient, it should be repeated as infrequently as possible. As a rule it is best not to fill the stomach completely, using from 100 to 300 cc. of fluid. Hence only concentrated food, such as cream and eggs, should be used; and a medicament may be added to this, if required.

Lavage.—Though, by gastric irrigation with water, we can secure almost all the effects that may be required from gastric lavage, or washing of the stomach, there are certain conditions when the addition of a medicament to the irrigating fluid may be of advantage. Thus, in extreme gastrectasia with luxurious development of yeasts or sarcinae, better results can probably be obtained by antiseptic irrigation than by the use of plain water. The best fluid for this purpose is a saturated solution of salicylic acid (about 1 : 500), as it combines a high degree of antisepticity with low toxicity; and the slight solubility of salicylic acid in water precludes the use of solutions of excessive strength. While warm alkali irrigation (up to 5 per cent sodium bicarbonate) is probably but little superior to the copious use of plain water in hyperchlorhydria, it is of decided advantage in favoring removal of mucus in gastric catarrh. The most rational method of silver nitrate administration in gastric disease is, no doubt, silver nitrate irrigation practiced according to the method of Gumprecht:[54]

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* This is the twenty-second of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

> After the stomach has been washed out with water, one introduces from 100 to 200 cc. of 1 to 2 per cent solution of silver nitrate (in distilled water) for one or two minutes and then siphons it out. This is to bind gastric chloride. Now from 100 to 250 cc. of this solution is introduced and permitted to remain for two minutes, then withdrawn, and the stomach is washed with warm water until the fluid—at first cloudy with silver chloride—finally returns clear.

DUODENAL TUBE ADMINISTRATION

For the administration of medicaments unsuitable for injection into the tissues, a method has of late become available, with the development of the duodenal tube, that is of use most especially in cases of uncontrollable vomiting and purging. This method was developed chiefly by Max Einhorn, from whose book[55] the following items of technic are freely quoted:

> The capsule, as well as the lower part of the rubber tube, is moistened with warm water and put into the pharynx of the patient. Then the latter drinks some water, and the instrument thus soon passes into the stomach. To be certain that the capsule did not get stuck in the esophagus, it is well to have the patient shake his abdomen and to aspirate a syringeful of chyme. This can easily be identified as gastric contents. Now we pass a syringeful of water and then one of air through the instrument. The rubber tube is then clamped off and left alone for about one hour. The patient is told not to close his mouth too tightly, so that the tube is not retarded in its wanderings. The patient must also avoid intentional swallowing of the tube. Through the peristalsis of the stomach the capsule is pushed on farther, and usually passes through the pylorus into the duodenum, and later into the beginning of the small intestine. It is best to have the patient read some light literature, in order to divert his attention. After one hour we examine how far the capsule has progressed; if sign III is near the lips (70 cm.) or inside the mouth, we try to aspirate. If the capsule is in the duodenum, we generally obtain a clear, golden yellow or watery liquid of alkaline reaction and somewhat viscid consistency. If, however, it is in the stomach, we obtain an acid liquid resembling the one first removed. This can, of course, occur if the tube lies in the stomach in a coiled manner. Should the latter be the case, we must partly withdraw the tube, after putting water and air through it, up to the mark II (56 cm.). The tube is then again clamped off, and after from one-half to one hour the procedure is repeated. We generally succeed in nearly all cases (of course, not in such where there is pyloric stenosis) in obtaining duodenal contents. When the tube is to be withdrawn, it is clamped and slowly pulled out. When the beginning of the esophagus is reached, the patient is told to swallow, and during this act the capsule is withdrawn.

The tube, stiffened if required by the temporary introduction of piano wire, may also be passed through the nostril, a useful modification of the technic to be resorted to with unconscious or delirious patients, as the tube can thus be passed with much less trouble and the patient might bite the tube passed through the mouth. Passing the tube through the nose is also to be preferred when it is to remain in the duodenum for days.

If there is doubt whether the capsule is in the stomach or in the duodenum, the following hints may be helpful:

> 1. If the capsule is in the stomach and we aspirate, the syringe quickly fills with fluid or air, provided the holes are not clogged by coarse food. The heavier rubber tube attached to the syringe does not collapse, as this organ is always filled with either air or liquid. If, however, the capsule is in the duodenum, one finds that the connecting rubber tube will collapse on rapid aspiration. [After waiting a short while and after trying aspiration, slowly, fluid enters the syringe.]
>
> 2. If the capsule is in the stomach and air is forced through, the patient feels the entrance of the air very plainly and can localize where it occurred. If the capsule is in the duodenum or jejunum, the patient does not usually feel the entrance of air.
>
> 3. *The Milk Test.*—If we give the patient two or three swallows of milk (provided, of course, that no milk has been previously taken), and then aspirate with the capsule in the duodenum, we obtain pure duodenal contents (golden yellow or clear as water) without any admixture of milk. If, however, the capsule is in the stomach, the milk appears at once.
>
> 4. The roentgen rays show the position of the capsule in the stomach or duodenum very plainly.

If the tube, after a sojourn of three hours (or—if it had been introduced the night before at retiring—in the early morning), has not reached the duodenum, the patient is instructed to lie half an hour on his right side. Aspiration is then tried; if gastric contents are obtained, the patient is given something to drink and told to walk about for ten or fifteen minutes. If the examination again shows that the tube is in the stomach, an effervescing drink is given. Half an hour later, aspiration is again performed. Should the tube, showing mark III at the lips, still have failed to enter the duodenum, the patient is given 0.5 mg. of atropine sulphate. One hour later another examination is made. If the tube is still in the stomach, an effervescent drink is given again. After waiting a few hours more and still finding the tube in the stomach, an aperient (magnesium sulphate or citrate) may be employed.

When the duodenal tube is used for alimentation, the food is usually given every two hours, eight feedings a day. The standard food is milk (240 cc.), one raw egg, and a tablespoonful or two of lactose. Should the lactose cause diarrhea, it is omitted. Whatever is fed to the patient should be of blood temperature—neither cold nor hot—and it must be given slowly.

After each feeding, before the stopcock is closed, a little water and then some air should be injected, in order to keep the tube always empty. If one is not careful to clean out the tube each time with water and air, the end of the tube is liable to become clogged in a day or two. Then the tube has to be taken out and replaced, with a great deal of inconvenience to the patient, as well as to the physician and nurse; and the tube removed is often found spoiled. While the patient has the tube in, his mouth should frequently be washed out with some good mouth wash. As these patients do not eat anything, there is nothing to cleanse the surface of the tongue, and it is very essential that it should be kept clean.

Duodenal alimentation may be life saving in the vicious circle of vomiting that has produced starvation acidosis, which in turn maintains the vomiting and may render it quite uncontrollable.

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[54] Gumprecht, F.: Die Technik der speciellen Therapie, Jena, Gustav Fischer, 1903, p. 95.

[55] Einhorn, Max: The Duodenal Tube and Its Possibilities, Philadelphia, W. B. Saunders Company, 1920.

In thrombo-angiitis obliterans, good results have been obtained from flooding the organism with large quantities of fluid (9 or 10 quarts [liters] daily). As such large quantities of fluid cannot be taken by the patient with impunity in the ordinary way, it is given best, according to Willy Meyer, by duodenal injection. The patient may be given his meals in the ordinary way by mouth. At the same time, he is given about 9 liters of Ringer's solution daily through the duodenal tube, which in one case was left in situ for a period of about four weeks.

Remedies can be injected into the duodenum for two purposes: (1) to exert a therapeutic influence within the duodenum or intestine, or (2) to act in distant localities after absorption from duodenum or intestine of special remedies whose sojourn in or passage through the stomach does not appear desirable.

Strong silver protein (0.5 per cent solution) or mild silver protein (20 per cent solution) may be instilled into the duodenum in quantities of about 15 or 20 cc., or one may introduce silver nitrate, 100 cc. of the strength of 1:20,000 up to 1:1,000, with good results in chronic duodenitis and cholecystitis or duodenal ulcer. Cathartics or sedatives may be given to patients who have the duodenal tube in place, directly into the duodenum with quicker and prompter action than through the stomach. Vermifuge and endamebicidal remedies have been given transduodenally to avoid their effect on the stomach in irritable conditions of this organ.

(To be continued)

RELIGIOUS HEALING

PRELIMINARY REPORT

ALICE E. PAULSEN, Ph.D.
NEW YORK

(Concluded from page 1623)

MODERN MOVEMENTS WITHIN THE CHURCH

CATHOLIC CHURCHES

Healing has always occupied considerable attention in the Roman Catholic church. Many Catholic churches possess relics which are believed to have special healing powers. This may be a piece of bone taken from the body of a saint, as a rule one who is said to have performed miracles of healing during his or her lifetime. The believer may at any time offer prayers to this saint or ask the priest to apply the relic. This is done by touching the afflicted part of the body with the relic (enclosed in a case) and it is believed that healing may thus be accelerated. Some churches hold weekly healing services which are attended by all denominations in great numbers. The particular relics at these churches are believed to have special healing power. It is distinctly understood, however, that the patient should also have medical attention when this should be sought.

Some priests carry a portable relic on their visits to the sick. Many report noticeable improvement following its application. The prayers for the sick offered both at the bedside and in the church are believed to have a direct influence on the patient's welfare, and not infrequently marked improvement occurs after the priest has administered unction.

Another healing ceremony observed in the Catholic church is the novena. This consists of visits to seek help by means of touching a relic once a week for nine consecutive weeks, or daily for nine consecutive days. Following each service the patient is touched with the relic. During the nine weeks or days, he is expected to live an especially devout life and to devote considerable time to meditation and prayer.

Still another and perhaps the most important type of healing in connection with the Roman Catholic church is that accomplished at various shrines. There is, as a rule, some legend connected with the shrine which leads the pilgrim to believe that if he makes a pilgrimage to that particular spot and offers a petition for help, he will be instantaneously healed. The devout Catholic is convinced that these cures, when they occur, as they sometimes do, are miracles accomplished through direct answer to his prayer.

Lourdes in France and St. Anne de Beaupré in Canada are the most famous Catholic shrines. The legend connected with Lourdes is that the Blessed Virgin appeared to a peasant girl in that place and told her that there was a spring in the grotto at her feet which would effect the cure of the physical ills of those who would bathe therein. And it is claimed that what the Virgin said is true. The spring was first established in 1888. From that time on pilgrims have gone to Lourdes in great numbers, figures affirming the number to be about 1,000,000 a year now, some for relief from physical ills, some merely for spiritual uplift, some out of mere curiosity. Though comparatively few are healed, it is estimated that since the discovery of the healing power of this pool of water 4,000 in all have experienced cures. In the chapel at the shrine are crutches and other supports that have been thrown aside by the healed who had no further use for them.

A medical board is maintained at the shrine and every cure is certified by this board. A patient must bring with him from his personal physician documentary evidence of his condition before seeking the cure. It is said that only those patients who bring evidence of having suffered from organic disease are classified as miraculously healed. The *Journal de la grotte* reports each case in detail, and any visiting physician who desires to examine any patient when a cure is reported is privileged to do so.

The procedure at Lourdes is very complex. A long series of preparatory ceremonials and devotions precedes the actual dipping in the pool.

SPECIAL ACTIVITIES IN CHURCHES

Aside from any connection with guilds or organized prayer circles, and the like, many churches have well established health work similar to that in any other field of social service, carried on through medical clinic, visiting nurse, social case worker or other individual agent.

Churches also support convalescent homes, preventoriums and hospitals. They have an interest in various auxiliaries in connection with all sorts of medical work. The Episcopal church, for instance, supports the city mission society, which, among its other activities, has visiting or resident chaplains in forty New York hospitals. Because they are so pressed for time, the work of these men is confined almost entirely to the giving of extreme unction and the services to patients about to undergo surgical operations.

The church has an unusual opportunity to reach a great number of people in its various activities. Few recognize the influence that a large modern church may have in a community. It is estimated that 55,500 people used the Madison Avenue Presbyterian Church House for social and educational activities during the past year. Moreover, 39,161 attended Sunday school, 475 of the enrolled members of which are over 18 years of age. Besides this, 58,000 persons attended public worship on Sundays. The pews are free, and all are welcome. During the year the ministers and other members of the staff made 9,699 visits among members of the congregation. This is mentioned in passing merely to indicate the possibilities of such an organization as a means of spreading knowledge and influencing behavior.

PROBLEM RECOGNIZED BY IMPORTANT CHURCH AGENCIES

Leaders in theological seminaries are interested in this problem because they must educate ministers in the right attitude toward it. For the most part they have taken no definite stand in the matter because its growth has come on them unaware. In general, as expressed by Professor Elliott of Union Theological Seminary, the theologian is not desirous of making religion a healing movement. He does not wish to take up work which the psychotherapist is better able to handle. On the other hand, he wishes to do his part if called on to do so, and especially does he wish to make religion an integral part of every aspect of life, that its unifying influence may work for the betterment of man at all times and that it may lend support especially in time of distress.

As a central agency, including in its membership many different denominations and churches throughout the country, the Federal Council of Churches is continually called on to give advice or to express opinions with regard to all aspects of church work. With the present interest in healing and comparatively little knowledge of it on which to base reliable opinions, it has become a practical necessity for this body to undertake research with regard to it. One of the problems before its research department at the present moment is the relation of religion and health. It is withholding opinion until such research shall have been completed.

PSYCHOLOGIC FACTORS

As we review the methods employed in the types of religious therapy which I have been considering, we are immediately impressed with the rôle allotted to suggestion.

Each system in some way introduces the idea of cure or health after preparing the mind through one means or another to accept it, and the fundamental principle of each system is the assumption that any idea possessing the mind tends to materialize in the body.

This is, indeed, a fundamental law in suggestion; but, happily or unhappily, there are numerous ways in which this tendency may be neutralized long before it actually does materialize in the body. Inhibitory influences either in the mind or in the body must be taken into account.

Now, counteracting ideas are among the most powerful inhibitors. Recognizing this, the faith healer makes his first step the overcoming of whatever inhibiting ideas may be present in the patient's mind. Not until this is accomplished does he advance the suggestion designed to serve his especial purpose.

His method may be a process by which he builds up a system of ideas through discussion, reading, recitation, meditation, concentration, "treatment" or other method of filling the patient's mind with his particular line of thought. By constant repetition alone these ideas may gain precedence over other ideas which he constantly denies or associates in a negative way with the patient's desire—to get well, to be prosperous, to be happy. The new system soon becomes dynamic. Being linked with the patient's desire and attached by a religious setting to an instinctive mechanism, it readily gains possession of the field. Constant consideration of it establishes the ideas involved, just as any other habit becomes established. As long as the patient keeps in practice, it is quite as difficult for him to change his mental attitude as it would be for him to change a motor habit once firmly established.

Thus, in the case of the trained Christian Scientist and other New Thought students, the suggestion that enters into the treatment falls in especially prepared soil. The critical faculties are as effectively controlled as if the patient were hypnotized. One link in the chain of conditions that may inhibit the materialization of the idea in bodily activity is eliminated. Then, too, there is the matter of physical relaxation and the further concentration of attention involved in the conditions under which treatment is given. Even though the proper apperceptive mass has not been built up, his mind would naturally be less resistive under these conditions of control.

In some cases the descriptions given by patients who have undergone treatment at the hands of certain practitioners closely resemble the description of what Braid terms slight hypnosis. "The subjects become more or less lethargic but are conscious of what takes place and suffer no subsequent loss of memory." In some of Braid's experiments, this group comprised about 90 per cent of those who responded to curative suggestions.

Cramping the attention in one way or another is an effective method of producing hypnosis. While the members of these healing cults volubly deny that their work in any way involves hypnotism, they could not fail to note the resemblance were they aware of the facts in the case. Few recognize that there are all stages of subjectivity in hypnotism, and that a person may become as effectively controlled by an idea that has taken full possession of his mind as he may be by the operator in what he readily recognizes as hypnosis.

And so it is with other forms of "treatment." The Divine healer, for instance, prepares the way for his final suggestion by a preparatory discourse and affirmative prayer. He withholds the delivery of his dynamic suggestion until something conveyed to him through his rapport with the patient tells him that the psychologic moment has arrived. The patient at this time may be experiencing such intense emotion as the result of the implicit faith that has been established in his mind, with its resultant expectancy, that he may be completely incapacitated from exercising his critical faculties. It may be that he is in some other state of subjectivity, probably hypnotic; or, if he has come for the relief of some acute distress, such as extreme pain, his attention may be so completely absorbed by his symptoms that he can offer no resistance to the idea now implanted in his mind by the operator. The principle is the same in all cases. Ideas that may counteract the situation are first controlled, and the patient's suggestibility is then further enhanced by the conditions of the treatment.

A similar situation prevails in cases in which cures are effected through relics or devotions at shrines. The long series of preliminary ceremonies establish expectancy, and the final act is consummated at a moment when emotion is at its height or when the patient is otherwise unable to oppose the suggestion.

But there are certain aspects of the situation, especially in the case of the more elaborately organized systems, not so readily discernible on the surface. To appreciate these, we must consider how his experience or how his attention to a system of ideas influences the subject's affective life.

Conveyed to the patient in one way or another are certain fundamental ideas which become so firmly implanted in his mind that they furnish him with convictions beyond all dispute which have a marked emotional effect. These ideas form the nucleus for the belief that God, an all powerful, all knowing, everywhere present beneficent power, or force, actually exists; that this power exists in a given relationship to the individual; that the establishment of such a relationship is natural and normal; that such a relationship, once established, enables him to commune with this power; that in this communion a contact is formed which results in a flow of energy which can produce effects not otherwise attainable.

It is in spite of the shortcomings of some systems, even of recognized theology or institutionalized religion, that this development of what we may term personal religion may take place. The personality of the individual, his other religious experiences, his mental attitude and his life in general, are undoubtedly deciding factors; but stimulus is supplied by the system or the experience through which the fundamental ideas are introduced.

The more earnest followers of any of the typical religious therapeutic cults are unanimous in their declaration that they have been led to a fuller realization of life, and that when they first fully comprehended the meaning of the idea of God involved in the teaching of their leader, everything changed for them. They speak of having developed on the basis of this an indescribable joy and satisfaction, a sense of security not otherwise attainable, and an ability to face life with unbounded courage. The full import of these ideas may burst on the patient in the form of sudden enlightenment as the result of some vital experience that serves to integrate his previous experience, or it may be built up by a more gradual process. Regardless of how he comes into a full realization of their significance, this realization has a distinct influence on his affective life.

The appeal to the ego is tremendous. What could have a more expansive influence on the personality than to believe, without the slightest shadow of doubt that one is essential to the plans of God himself; that one partakes of the qualities of God? Followed to its logical conclusion with regard to disease, if God is omnipotent and man partakes of his qualities, indeed, if God is in man, disease is a very minor matter and can readily be overcome through this power within. And what could be more comforting than to know beyond the possibility of any doubt that one may turn at will to a higher power with absolute assurance that one will be given strength to meet any difficulty that may arise? Those who have attained this belief actually report a sense of security beyond their ability to account for otherwise, and those who have learned to carry on what they term effective communion with whatever power it may be that they recognize actually do report a restoration and a rejuvenation as a result of this communion.

The attainment of these convictions is reported to add new zest to life, to develop confidence, serenity of mind, cheerfulness, and a preponderance of loving affections toward others. Unfortunately, in some cases the latter is not followed to its logical conclusion, and it is entirely just to say that many of the cults fall short in this respect, appearing entirely selfish in their purpose. But even though optimism and cheerfulness are induced in the patient on a more superficial basis, it serves its purpose by raising his morale and directing his attitude toward the difficulties of life.

Particular mental states inherent in the functioning of the religious instinct may be of especial importance in their influence on physical conditions. Dr. William Brown Wilde, reader in mental philosophy in the University of Oxford, is sponsor for the statement, "We can say as a fact that suggestion produces results; that autosuggestion produces more permanent results, and that if genuine faith is aroused the most astounding results of a permanent nature may be produced."

William James, in discussing prayer, writes: "As regards prayer for the sick, if any medical fact can be considered to stand firm it is that in certain environments prayer may contribute to recovery and should be encouraged as a therapeutic measure." He goes into considerable detail to make clear the nature of the mental process involved in prayer:

> Man can learn to transcend those limitations (of finite thought) and draw wisdom and power at will . . . The divine presence is known through experience. The turning to a higher plane is a distinct act of consciousness. It is not a vague twilight or semiconscious experience. It is not an ecstasy, it is not a trance. It is not superconsciousness in the Vedantic sense. It is not due to self hypnotism. It is a perfectly calm, sane, sound, rational common sense shifting of consciousness from phenomena of sense perception to phenomena of seership, from the thought of self to a distinctly higher realm. . . . For example, if the lower self be nervous, anxious, tense, one can in a few moments compel it to be calm. This is not done by a word simply. Again I say it is not hypnotism. It is by the exercise of power. One feels that spirit of peace as definitely as heat is perceived on a hot summer day. The power can be as surely used as the sun's rays can be focused and made to work, to set fire to wood.

It may well be that religious healing makes use of forces not ordinarily recognized. It remains for us to study the nature of these forces, to determine how far they are present in the normal person, how far they may be applied with sanity, and what method of application is most advantageous.

SCOPE AND EVALUATION OF THE WORK

Now, we may ask, What limits do the advocates of the so-called faith cures place on the possibilities of their work? Except as indicated in the case of the more conservative in the theological field, the answer is, theoretically none. In the absence of proper records, we can judge only by verbal testimony, such records in the form of narrative as one hears on every side and the few attempts that have been made at a systematic study. In the course of this limited survey we have heard and read endless testimony on the part of persons who believe that they have been cured of everything from a pain in the heel to cancer. Unbounded health, wealth and happiness may be secured by those methods, according to some who have tried them. Results may be instantaneous, gradual, complete or partial.

Certain New Thought advertisements reproduced below, give an idea of what New Thought proposes to accomplish:

"Financial Problems Solved Through New Thought"; "Rheumatism, Hay-Fever and Business Difficulties

Overcome"; "How New Thought Helped When My Husband Became a Flirt"; "How Constructive Thinking Helped Heal Tuberculosis"; "Replenishing the Nerve Centers"; "How to Heal Your Body and Pocketbook Through Expanding Consciousness"; "How to Be a Genius"; "Curing Epilepsy in Fifteen Minutes."

The psychologist Henry H. Goddard, Ph.D.,[12] reports one of the most systematic studies that has ever been made on this subject. Goddard included in his study more than 1,600 records of individual cures, mainly taken from the Divine healer Dowie's work. About two thirds of these were females, and they ranged in age from 6 to 86 years. The greatest number ranged from 20 to 50 years, and among women the married were about three times as numerous as the unmarried. Further results of Dr. Goddard's study were as follows:

> The duration of the disease from which they were healed varies from a few months to fifty-two years. The average time is about twelve years for each sex. Thirty-three per cent report instantaneous cures, 50 per cent gradual, and 17 per cent reported that they were not yet perfectly healed. It must be noted that while 33 per cent report instantaneous healing, it is clear from their own account that they almost always mean that pain ceased instantly. And it may be mentioned that of all the returns that give data on that point, almost every one shows that pain ceased at the time of prayer.
>
> Again, of the whole number, 76 per cent were treated or prayed with by "Dr." Dowie in person; 7.5 per cent were prayed for by him at a distance; 4.5 per cent were prayed for by Mrs. Dowie; 7.5 per cent were healed in answer to their own prayers or efforts, and 4.5 per cent were healed in answer to prayers of friends.
>
> The number of ailments mentioned in their accounts of themselves varies from one to nine for the males and one to eleven for the females.
>
> The time that had elapsed (at the time the study was made) since the cures varied from a few days to fourteen years. Time required for full recovery may be as much as two months. If longer than that, it seems to be regarded as a failure and is not mentioned.

*Goddard's Classification of Diseases Cured**

	Nervous	Circulatory	Respiratory	Digestive	Contagious	Wounds	Cancer	Rheumatism
Males	20	10	20	15	5	14	5	11
Females	22	14.5	18	16	5	3.5	11.5	9.5

* The figures are in per cents.

Among the remarkable features mentioned may be noted:

> Legs lengthened from 1 to 5 inches; "gained 95 pounds"; hip 2½ inches reduced; fifty-six abscesses cured at one time; deaf and dumb; senseless three weeks; "forty whiskies a day" cure; "wreck physically"; hip disease; goiter; three bullets; fever settled in bones; appendicitis; leg shortened 2 inches; born blind.

The following list of troubles, as stated by the patients themselves, is given:

> Abscess; accident; ague; appendicitis; ankle sprained; asthma; backache; back weak; bad habits; bilious trouble; blindness; blind from birth; blood poisoning; Bright's disease; bronchitis; bronchial disease; broken arm; burns; burned hands; blood disease; brain fever; cancer; cancer in tongue; cancerous tumor; carbuncle; catarrh; chills; cholera infantum; cholera morbus; congestion of lungs; consumption; constipation; convulsions; cough; chlorosis; compound curvature of the spine; croup; deafness; deaf and dumb; diabetes; diarrhea; diphtheria; dislocated shoulder; dislocated knee; dropsy; dysentery; dyspepsia; diphtheritic paralysis; devil cast out; earache; eczema; epilepsy; erysipelas; eyes, inflammation of; eyes, weak; eyes, sight failing; feebleminded child; fever; fever sores; felon; fistula; gangrene; gambling; goiter; granulated eyelids; gallstones; headache; healed when dying; heart disease; heart broken; heel lame; hay-fever; hydatids; hydrophobia; hemorrhage of lungs; hemorrhage of kidneys; hemorrhoids; hernia; hip broken; hip disease; hip joint renewed; hysteria; imperfect sight; infidelity; impediment in speech; impotent; indigestion; inflammation of bowels; inflammation of stomach; inflammation of lungs; inflammatory rheumatism; internal tumor; ivy poison; internal troubles; intestinal trouble; insanity; kidney and bladder; knee injured; knee, stiff; knee, swelling in; la grippe; lame, leg too long; leg too short; leg poisoned; leukemia; liver trouble; locomotor ataxia; lung trouble; lung fever; lumbago; malaria, measles; meningitis; morphine habit; mumps; near-sightedness; nervous exhaustion, nervous prostration; nervous trouble; neuralgia; nervous debility; ovarian tumor; palsy; paralysis; periostitis; piles; pneumonia; polypus; puerperal convulsions; peritonitis; pleurisy; paralysis of bowels; palpitations of heart; quinsy; rheumatism, running sore; rib broken; rupture; salt rheum; scalding; scarlet fever; scrofula; skin eruption; skull fracture; sick headache; spasms; seasickness; sleeplessness; smallpox; spinal meningitis; sore throat; spinal disease; spine, curvature of; sciatica; stone cancer; stigmatism; stiff hip joint; stomach trouble; sunstroke; synovitis; symmetrical keratiases of the palms and soles; tapeworm; throat trouble; tobacco; toothache; tonsillitis; tuberculosis; telegraphers' paralysis; tuberculosis of bowels; tumor; tumor, fibroid; thigh bone diseased; typhoid fever; ulcers; urinary trouble; ulcers in bowels; varicose ulcer; varicose veins; whisky; wounds; wrist sprained; weak lungs; weak eyes; white diphtheria; wild hairs; whooping cough; yellow fever.

Similar lists might be prepared from the records of cures ascribed to any one of these systems. We would also find cases of the same nature in which cures failed to be effected. But our research under the present circumstances would do us little good as far as obtaining any real knowledge with regard to the validity of the claims is concerned. This is due to the fact that none of these workers keep adequate records. They depend largely on the patients' testimony for diagnosis as well as for evidence of cure. With no control to determine how many patients were actually suffering from the conditions reported or how many of the reported cures were spontaneous or due to other influences than the mental treatment, we have no way of judging whether its representations are based on pure chance results or on demonstrated efficacy. We have also no data that would definitely warrant either a wholesale or a restricted use of the method in general, although it is obvious that many persons believe that they were cured of diverse diseases, and certain phenomena actually have occurred.

On the surface it would appear that it can do no real harm so long as it remains within rational limits; but it is also obvious that when it is carried into absurdities, as is frequently the case, it can become very dangerous. It is remarkable that the entire matter should be so loosely controlled. To place emphasis on the mental side of life is most important; and, when this emphasis includes a sound philosophy and application of common sense, its contribution can hardly be overestimated. But when it results in the promiscuous teaching and practicing of mental tricks and self delusion, it is a positive menace. To disguise such practice in the name of religion or of science as a means of capitalizing the credulity of the ignorant is despicable.

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[12] Goddard, H. H.: The Effect of Mind on Body as Evidenced in Faith Cures, Am. J. Psychology **10**: 431 ff.

The newer movements within the church are in the same position as are the older movements independently organized. We can pass no judgment on them except from a theoretical point of view until some effort at a reliable evaluation of their work has been made. A similar statement applies also to the more general uses of religion as a therapeutic or reconstructive agent. With so many other factors involved, without controlled experimentation, judgment can be based only on opinion which is far from conclusive evidence.

Few workers in the religious field are aware of the nature of the problem with which they are dealing. This is quite natural, in view of its complexity. The physician would be at as great a disadvantage in the theological field. Knowing so little about medical science, it is not surprising that they are led astray by apparent similarities in their own teachings and those of the other field. The naive Christian Scientist, for instance, might think that Mrs. Eddy's statement that poison has a harmful effect on the body only because every one believes that it will do harm is fully vindicated by the following report, which recently appeared in the New York *Times:*

> Stockholm, January 18.—By means of hypnotic suggestion, which made subjects believe that poisons administered to them were nothing but water, Dr. Henry Marcus and Dr. Ernst Sahlgren, Stockholm scientists, have been able to offset to a marked degree the effect of poisons on the human system. This was done in a series of experiments at the Karlclinska Medical Institute to determine the effect of hypnotism on organic diseases. The scientists put three subjects into hypnotic sleep and then administered drugs, carefully recording the effects on blood pressure and pulse both with and without suggestion. When a drug which acts to increase blood pressure was administered without suggestion, the blood pressure readings ranged between 109 and 130 and pulse readings from 54 to 100. With suggestion, the blood pressures were from 107 to 116 and pulse readings all less than 67.

Those who advocate religious therapy will do well to compare their methods with other methods which are similar, but which leave out the religious element for good reasons. In this connection, it is interesting to consider the results obtained through various systems of moralization and reeducation used in the practice of psychiatry. Another system in which religion is purposely eliminated is in Coué's method of autosuggestion, which the religionists have so thoroughly embraced.

Some interesting data are being compiled by Dr. Shaler Lawton and his co-workers at the Columbia University College of Physicians and Surgeons. The results of Dr. Lawton's study may well serve as a warning. He is satisfactorily demonstrating, with certain cases for which medicine can do little, that the patient by exercising his morale may so completely control his attention that instead of fixating it on his symptoms, though they are of the most distressing nature, he believes himself cured and becomes entirely unaware of the fact that his physicial condition remains the same and that his disease is running the natural course of its development. The religious healer, misled by the patient's controlled reaction to his symptoms, may be misleading him to let treatment effective in the earlier stages of the disease pass by until it is too late to help him. On the other hand, we must not overlook the fact that we may be considering an efficient method in the course of evolution, and that trial and error may naturally play an important rôle in its progress.

What this method will finally prove to be can be only a matter of conjecture until the situation has been subjected to more intelligent study. In all probability we shall find that there are indeed certain fundamental principles common to all aspects of the situation, but that they will have to be applied in a great variety of ways.

With so many varieties of human personality, the prerequisite state of mind that is essential to the operation of any method can probably be obtained only through a method of approach suitable to the individual make-up and background. This may be strictly religious in some cases, purely ethical in others, and entirely intellectual in others, while certain individuals of weak emotionalism may be susceptible to the influence of any strong or persistent appeal. If the basic principle is faith in the particular appeal of whatever form and the expectancy that develops, similar results are to be expected from widely differing methods adapted to the particular type of individual.

A broad appreciation of the situation would admit that perhaps no one method, whether religious or otherwise, can be expected to reach all types. It may very well be, however, that the religious appeal based on the functioning of an instinctive mechanism is calculated to affect the largest number of persons, and that it may afford the soundest basis for the expectation of lasting results.

The medical profession has largely ignored and even denied the possibility of this method of approach. Meanwhile, as a reaction against the empiric method and the one-time drastic recourse to drugs, there has developed in some quarters considerable "therapeutic nihilism" except for the comparatively few diseases known by modern science to be susceptible to specific therapy. Still, the present materialistic trend tends too much to discredit methods of psychologic appeal to the alleviation of symptoms and cure of disease. This may be because, in spite of the strong evidence that there is some relationship between mind and body, very little is actually known as to how close this relationship is, how this action takes place, and what its limitations are. But it cannot be overemphasized that the physician should take account of whatever influence there may be between mind and body. Much medical practice has admittedly a bad psychologic effect on the patient. Too little effort, for instance, is made to overcome the tendency to concentrate on symptoms of disease and to give the patient an intelligent grasp of the situation that confronts him. Some physicians will send the patient away with a theory or explanation of his disease not founded on any scientific data, which frequently creates or strengthens an attitude of apprehension and makes for continued invalidism or physical and mental ineffectiveness.

Psychologically speaking, certain physicians thus persistently apply the principle of negative suggestion in conditions in which it may produce real untoward effects. This is quite as true of many practices in psychotherapy as it is of minor material or physical therapeutic methods. The medical profession is largely culpable for the widespread rebellion against such methods, as evidenced by the enormous development of these various forms of faith healing.

The medical problem is to discover the underlying facts and principles and to inculcate those which are sound in a well grounded system of practice which will recognize the true function of the mental and the spiritual as well as the material in the alleviation of human ills. Only in this way will it be possible to confine the practice of these methods to those who can be depended on to use them with the unselfish motives characteristic of the best types of religious and medical practice.

SUMMARY

1. The prevalence of religious healing and allied cults bears witness to the fact that the maintenance of individual health has become strongly associated in the minds of many people with religious and metaphysical ideas.

2. There is a great variety of sects and cults and movements appealing to this popular tendency to associate health and religion, such as Christian Science, Jewish Science, Divine Science or Divine Healing, New Thought and Scientific Christianity. These are organized outside the church. In addition, there is considerable activity with regard to healing among Theosophists and Spiritualists. Moreover, the work has also been taken up in the orthodox churches, especially in the Episcopal church. The Nazarene movement makes its appeal through the Episcopal church. The Guild of Health confines its work to other Protestant churches. The novena, the application of relics and visits to shrines, such as Lourdes and St. Anne de Beaupré, are well established practices in the Roman Catholic church. Individual clergy and laymen are also engaged in the work.

3. Some of these agencies are but little organized and have an ephemeral prosperity; but there are some that are well organized and with strong indications of being permanent. Christian Science especially has grown steadily since it originated in 1870, and New Thought has a similar history. The Nazarene movement and the Guild of Health have made a strong appeal within the church.

4. It is impossible to make any close estimate of the total number of adherents of this general movement, since some of the cults do not keep records of their membership. The number of Christian Scientists is estimated at 1,500,000. "Unity," a New Thought cult teaching "Scientific Christianity," is said to reach from three to five million people annually through its publications, lectures and prayer services. The Nazarene movement now has about 7,000 members. If the children and other dependents of adherents to these movements are counted, the number may reach 10,000,000. A wide appeal is also made through magazines and books. Some leaders make use of the radio to broadcast their teachings.

5. The attitude toward the medical profession ranges all the way from hearty cooperation, as in the case of certain individual workers and in some church agencies, to frank hostility, as in the case of Christian Science.

6. Enthusiastic testimonials and the apparently stable membership of some of these organizations (such as Christian Science, Unity and other New Thought cults, also the Nazarene movement and Guild of Health) show that many persons believe themselves to derive great benefit from them. It should be acknowledged that, although some of their practices appear unscientifice and even bizarre, others must be recognized as of possible benefit under certain circumstances.

7. The leaders of these movements either outside or inside the church are little disposed to set any definite limitations to the power and effectiveness of their therapy. The nature of the problem with which they are dealing is not fully comprehended by any of them.

8. Christian Science makes its approach through the concept that disease is "error," New Thought through the immanence of God, and others through still other metaphysical theories on which they base their practice; but practice itself shows considerable uniformity for all of these cults. It seeks to induce a cheerful, confident, serene state of mind, to remove the attitude of invalidism and similar negative emotions and beliefs, to promote relaxation, and to give full play to the suggestion or autosuggestion of health. Various subjective mental states and religious ecstasy are more or less prominent in the treatment of patients.

9. Those resorting to religious and metaphysical healers often express dissatisfaction with physicians for a lack of sympathy and a tendency to build up an attitude of invalidism. Unless the physician is on his guard against giving negative suggestion, such an attitude can very easily be generated in the patient. Leaders of these cults use this as a strong argument against the medical profession.

10. Since religious healing has for the most part been carried on without expert diagnoses of the cases undergoing treatment and without expert determination of their condition after treatment, it is not possible to pass judgment on the merits, harmfulness or limitations of this movement. Where spiritual therapy has been attempted under medical control, the results seem to indicate that:

(*a*) Neurotic patients, alcoholic habitués, drug addicts and the like are sometimes improved by the treatment.

(*b*) The morale and comfort of a patient with organic disease may be improved, while the disease continues to run its course.

There is no way of evaluating the results obtained through religious healing as compared with those obtained with the same types of patients through nonreligious suggestion. Controlled experiments are needed to obtain further data as a basis for judgment of the comparative efficacy of such treatment. Studies of suggestion of a nonreligious nature as a therapeutic agent show that it is quite possible to teach the patient so to control his attention that he is able largely to ignore his symptoms.

11. A scientific study should sharply distinguish between the practice and the theories advanced by these various cults. Probably more attention should be accorded to the practice than to the theory. The theory is perhaps considered necessary as a means of getting hold of the patient, and this no doubt varies to a certain extent. Different persons require different "theories" or modes of approach. The question arises whether or not a scientifically sound basis could be formulated for whatever is useful in these practices, so that the essence of the practice (so far as it may be found good) might be employed with good conscience in treating the sick.

12. Further study should deal with the following problems:

(*a*) What is the common essential of these various practices?

(*b*) How can this essence be given a form and rationale suited to scientific use?

(*c*) What are the benefits, limitations and dangers of these practices as established by a careful try-out under controlled conditions, carried on by physicians in cooperation with interested clergymen?

13. An adequate study will involve much work extended over a long period of time and carried on under unquestioned auspices by a most carefully selected personnel.

14. The whole problem is a serious one which the medical profession should not ignore.

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SATURDAY, MAY 29, 1926

THE HUMORAL MECHANISM AND HORMONE OF EXTERNAL PANCREATIC SECRETION

The remarkable secretory responses that can be secured through stimulation of certain nerves that supply the salivary glands are among the classic demonstrations of experimental physiology. Interruption of the nervous paths, either mechanically or through the action of drugs, is promptly followed by cessation of the characteristic function. Such observations have doubtless been responsible to a considerable degree for the widespread assumption that secretion in general occurs primarily in response to excitation of active cells through nervous paths. In recent years, however, evidence has accumulated to indicate that the promotion of secretory activity can be secured through the blood channels as well as the extrinsic nerves. This is currently described as the humoral, in contrast with the nervous, secretory mechanism.

Ivy and Farrell[1] recently demonstrated that a gastric pouch can be transplanted extra-abdominally into the mammary gland after severance of all nervous connections of the stomach fragment. Such transplants exhibit motility in unison with that of the unharmed gastric residual organ; and they also can secrete an acid juice after a meal or the administration of a secretagogic substance such as histamine. Comparable transplants of pancreatic tissue behave in an analogous secretory manner. According to Ivy,[2] the fact that they secrete continuously, being excited to greatly augmented pancreatic juice output after a meal, definitely establishes a humoral mechanism for pancreatic secretion; for one could scarcely expect the severed nerves to establish their connections in the midst of the far away mammary gland. Ivy and Farrell[3] have also provided what they regard as unequivocal proof that a hormone is concerned in the genesis of the external secretion of the pancreas. When both the pancreas and an independent loop of jejunum were transplanted, thus severing the nervous connections of each, the pancreas transplant secreted copiously after application of dilute hydrochloric acid to the mucosa of the intestinal transplant. Several minutes elapse before the response is secured; how else can it have been attained except through the transport of some newly generated or liberated substance carried by the circulation to its locus of action?

It is not easy to understand why the somewhat comparable salivary and pancreatic glands should behave so differently. Perhaps the correct explanation was ventured long ago by Starling.[4] Commenting on the insignificant secretory response of the pancreas to nervous stimulation, he remarked that whereas in the mouth the reaction, which must be rapid, is entirely nervous, in the stomach there is a mixture of the nervous mechanism with the more primitive chemical mechanism. The nervous secretion preponderates in this viscus. When we come to the pancreas, the primitive chemical mechanism, namely, the formation of hormones and their circulation through the blood to the reactive tissue, suffices to account for the whole activity of the gland, and it is doubtful whether in this activity the nervous system plays any part whatever.

ACIDIFIED MILKS

The action of hydrochloric acid in the process of digestion is largely, if not entirely, due to the number of free hydrogen ions present. Various foods, especially milk, have the property of binding large amounts of acid and converting the hydrogen into a nonionized form, thus to all intents and purposes neutralizing the acid. When foods of the type mentioned are given, much of the hydrochloric acid secreted is rendered inactive. Substances that thus reduce the hydrogen ion concentration are commonly termed "buffers." It has been demonstrated that the buffer value of cow's milk is considerably greater than that of human milk. Therefore the former neutralizes a larger amount of the hydrochloric acid of the stomach secretion. The resultant effect is an interference with the activity of the gastric enzymes through a reduction of the gastric acidity below the optimal hydrogen ion concentration zone of p_H 3.5 to 5.0. By the addition of an acid to cow's milk, its excess buffer salts may be counteracted and its digestibility made to simulate more nearly that of human milk. This method does not entail any appreciable reduction of the food elements, as pertains to the ordinary method of simple dilution.

Along with the demonstration and realization of these facts has come the practice of employing bacterially soured milks and also "debuffering" cow's milk with acid for use in clinical pediatrics. It is based on the assumption that the excess of buffers in cow's milk delays, and in many cases prevents, the completion of gastric digestion in infancy by inhibiting the acidity necessary to the optimal efficiency of the gastric enzymes. Particular emphasis is laid on the importance of gastric lipase. According to Faber, the principle that acidified milk favors the splitting of fats in the stomach may be used in the treatment of various disorders of digestion, particularly intolerance to fat and to sugar. In the latter case an increased digestion of fats appears largely to compensate for the necessary reduction in sugars. A recent writer[1] summarized the present situation in the remark that the rationale of adding an acid to cow's milk to improve its digestibility has been demonstrated by Clark[2] and Faber,[3] and popularized by Marriott.[4] The old fashioned recommendation of additions of lime water has accordingly fallen into disuse, for they are destined to increase the difficulties of gastric digestion at times when this alimentary function may already be under severe stress. Milk modified by the addition of acid has advantages, over bacterially soured milk, of convenience in preparation.

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[1] Ivy, A. C, and Farrell, J I: Demonstration of a Dog with a Transplanted Gastric Pouch and of a Dog with a Pancreatic Transplant, Am J Physiol **76**: 226 (March) 1926 Farrell, J. I, and Ivy, A C: Studies on the Motility of the Transplanted Gastric Pouch, ibid, p 227.

[2] Ivy, A C.: The Proof of a Humoral Mechanism for Pancreatic Secretion, Am J. Physiol **76**: 178 (March) 1926

[3] Ivy, A. C, and Farrell, J. I: The Proof That a Hormone is Concerned in External Pancreatic Secretion, Proc Soc Exper. Biol. & Med **23**: 577 (April) 1926.

[4] Starling, E. H.: Recent Advances in the Physiology of Digestion, Chicago, W. T. Keener & Co., 1906.

To decrease the digestive burden on the stomach in infants of lessened gastric digestive capacity, acidification of milk may be accomplished in this artificial way by the addition of various acids. Hydrochloric acid, lactic acid, citric acid in the form of lemon juice, and acetic acid as vinegar have all found champions, the choice apparently having been determined by considerations of immediate convenience. The lactic acid procedure has perhaps the greatest vogue at the moment. Partially debuffered milk has a practically unaltered taste and therefore is freely taken without objection by infants who dislike highly acid products. The organic acids mentioned are readily burned in the organism; hence, in contrast with the mineral acid, they function ultimately as potential bases in the metabolism.

There is always danger that a successful therapeutic measure may find application beyond its actual indications. A warning has lately been sounded by Faber[5] of the Stanford University Medical School, who advances the thesis that, on the basis of the available studies, acidified milk may be considered a useful therapeutic agent for certain specific disorders. As such, however, it should be given only when there are specific indications, and for periods of time limited by the regression of symptoms. Organic as well as inorganic acids deflect metabolism from the normal to a recognizable, though not as yet fully determined, extent. For this reason, Faber believes, the routine use of sour milk in the feeding of normal infants is not to be encouraged. For them, modification of cow's milk by dilution and carbohydrate addition remains the method of choice. The clinician should learn the main indications for the use of the acidified products and "play safe" by limiting his prescriptions to them.

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[1] Dunham, B. S.: Acidification of Milk with Vinegar (Acetic Acid) in Infant Feeding, Am. J. Dis. Child. **29**: 200 (Feb.) 1925.

[2] Clark, W. M.: The Reaction of Cow's Milk Modified for Infant Feeding, J. M. Research **31**: 431, 1914.

[3] Faber, H. K.: Hydrochloric Acid Milk in Infant Feeding, Am. J. Dis. Child. **26**: 401 (Nov.) 1923.

[4] Marriott, W. M., and Davidson, L. T.: Acidified Whole Milk as a Routine Infant Food, J. A. M. A. **81**: 2007 (Dec. 15) 1923; The Acidity of the Gastric Contents of Infants, Am. J. Dis. Child **26**: 542 (Dec.) 1923.

[5] Faber, H. K.: Acidified Milks, Am. J. Dis. Child. **31**: 395 (March) 1926.

LIGHT AND THE EFFECTS OF VITAMIN A

The beneficial effects of sunlight on the human organism have received a significant interpretation through the more recent studies of nutrition. The discovery that rickets represents a true deficiency disorder, and that it can be cured or averted by definite vitamin-bearing foods and certain types of radiant energy alike, has directed attention to the newly recognized potencies of both vitamins and light. Cod liver oil and egg yolk contain antirachitic material. They also furnish liberal amounts of vitamin A, which prevents keratinization of various groups of epithelial cells in the body, of which xerophthalmia is the classic experimental indication. Students in this field of study have already insisted that antiophthalmic and antirachitic potencies should not be regarded as in any sense identical, even though certain food products embody both of them. To emphasize the distinctions, the two properties have already been given separate designations as vitamins A and D, respectively. Thus, cod liver oil and egg yolk contain both; milk fat is comparatively rich in vitamin A and poor in the D factor; and this seems to be true of many "green" foods.

These assertions are based on animal experimentation; nevertheless it has not yet been easy to eradicate the assumption that ultraviolet radiations will replace vitamin A as well as the antirachitic factor. Since deficiency of vitamin A, as exemplified by the characteristic symptom xerophthalmia, has not been extensively encountered in the clinics of this country, there has been little opportunity to test the possible efficacy of light. Recently Bloch[1] of Copenhagen, who has been a pioneer in the study of the xerophthalmias of childhood, has taken occasion to investigate the question in suitable cases. His careful studies indicate that exposure either to the carbon arc light or to sunlight does not cure xerophthalmia. Light cannot replace vitamin A or supply it to the animal organism. Enthusiasm for the benefits of radiant energy and the outdoor life should not, therefore, warrant any one in overlooking the ever present need of vitamin A. Light is not a universal panacea for all human ills. Specific food needs must also be met by any program of physiologic welfare.

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[1] Bloch, C. E.: Light and the A-Body, Am. J. Dis. Child. **31**: 315 (March) 1926.

The public is becoming increasingly familiar with the immunity gained toward certain microbic diseases by a course of prophylactic treatment. Protection thus secured has become popular and is freely welcomed. Parents and children alike even exhibit eagerness to acquire the obvious advantages. Unlike such immunities, the protection gained at any time through diet against the deficiency disorders represented by lack of vitamins is far less persistent. Consequently, prophylactic measures should not be abandoned when relief seems assured. Bloch has cited illustrations of the wisdom of this advice in connection with the supply of vitamin A; and Hess[2] has lately issued a similar warning in relation to rickets. He points out that recurrences are very frequent, especially during the second year of life. This being the case, it is clear that specific therapy—whether with cod liver oil or ultraviolet irradiation—should be continued after all signs and symptoms of rickets have disappeared. Furthermore, cod liver oil should be given not only during the first, but also during the second winter. This is advisable particularly in regard to infants who have had rickets and who are, therefore, susceptible to a recurrence in the course of the subsequent winter. The mention of the season has reference, of course, to the periods of greatest incidence of the malady.

EUTHENICS

It has been argued that "the accomplishment of a true eugenic program will be the crowning work of the health movement and the grandest service of science to the human race." But present woes demand consideration while we are contemplating future joys. The consequences of innumerable past events press on us; we must try to offset the discomfort or damage of "the heavy hand of the past" and likewise of the ever present menaces of the present. Furthermore—and this is less often adequately emphasized—we must attempt to capitalize omnipresent advantageous possibilities for the future, when opportunity knocks at the door. In matters of health this is sometimes described as an interest in hygiene, the discipline that teaches how to create for ourselves healthful conditions of living. However, human welfare contrasted, perhaps, with mere bodily well being involves a larger objective than individual or public health. It is not merely concerned with curative and preventive medicine; there is the added duty of man to better his conditions by availing himself of added knowledge already at hand. With this in mind, Ellen H. Richards selected the expression "euthenics" to describe "the betterment of living conditions, through conscious endeavor, for the purpose of securing efficient human beings." As a recent writer has added, this does not refer to the efficiency of the factory, which makes a man into a machine to turn out a specific product in the shortest possible time, but the efficiency of the thoroughly sound, highly trained mind in the thoroughly sound, highly trained body, which can accomplish the routine tasks of every day with the minimum of time and effort, leaving over a great store of energy for the additional duties and pleasures of an abundant life.

The contemplation of these purposes through academic training is by no means new. For many years the so-called home economics movement in this country has been concerned with varied aspects of the inclusive problem of how to live. At first the more purely material aspects of the subject—problems of food, clothing and shelter—were most stressed, until the training has extended its ramifications into the curriculums for women in all the state universities. There are indications that even the more conservative colleges for women are contemplating the transfer of emphasis in part from the subject to the object of study. Thus, Vassar College has lately given recognition to eugenics as a field for major study.[1] Properly enough, this has not called for new subjects of instruction, but rather a selection of topics with some motivation of interest in them; physiology, psychology, economics, political science, and even botany and zoology may contribute to the end. It already appears that the most popular combination for a "euthenics major" is that dealing with child welfare, for which the most important courses are child hygiene, child psychology, chemistry of food and nutrition, heredity, charities and corrections, and the family. In every case the courses chosen must have a common focus and must be preceded by training in the elementary sciences, with special emphasis on the general principles of physiology, psychology and economics.

There is no unanimity of opinion with respect to the principles of education. The stress on "practical" or "applied" courses will be debated by many with the contention that apprenticeship in everyday life affords the best training in vocational directions. It is a fact, however, that the traditional curriculum for women is changing. The growing power of women in the field of child health, child protection and child education must be recognized. Eugenics is supplementing hygiene. Professor Cockerell[2] has recently made a plea for something more than mere direct utilitarian concern with the resources about us:

> Is our great undertaking to include simply the sources of food or shelter or clothing? Or if we include the flowers, is it only because they can be eaten by cows, or because innocent people will sometimes buy them, and so give them commercial status? I do not so understand it. We live in a great and wonderful environment, to which we may react in a thousand ways. Broadly speaking, happiness comes through the harmonious exercise of our faculties. To be blind where we might see, callous where we might feel, dumb where we might speak—these are the great futilities, in the presence

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[2] Hess, A. F.: Recurrent Rickets, Am. J. Dis. Child. **31**:380 (March) 1926.

[1] Macleod, Annie Louise: Euthenics at Vassar, J. Home Economics **18**:119 (March) 1926.

[2] Cockerell, T. D. A.: The Duty of Biology, Science **63**:367 (April 9) 1926.

of which material wealth is of small account. Thus we must hold that our resources are only limited to those things which we can appreciate with our senses, and get some good by so doing. Wealth of this kind is so abundant that there is more than enough for all. No one can use more than a small part of it, but many minds and hearts, with a common purpose, may approach a grand synthesis which some genius will clarify and define. This is the manner of intellectual progress.

Current Comment

FREAK MEDICAL PATENTS

At various times THE JOURNAL has called attention to the fact that the United States Patent Office is, apparently, unaware that there is such a thing as modern medical knowledge. An article in a current magazine[1] details a number of patents that have been issued for bizarre products and devices of a medical or a medicinal nature. These include Perkins Tractors, Sanche's Oxydonor, the tapeworm trap of Meyers, the "consumption cure" of Serghison, and several others. A patent issued March 1, 1921, to one Mary McGuire Wilson for the "Process of and Material for Reducing Fatty Tissue" could well have been added to the list. According to the patent specifications (no. 1369997), the Wilson formula for reducing weight is: alum, 12 ounces, camphor, 2 ounces; alcohol, 12 fluidounces, and witch hazel, 32 fluidounces. This mixture—which the United States Patent Office considers a new and useful invention—is to be applied to the skin of the "stylish stout" immediately following a hot tub. The stuff is then "whipped or spanked with the fingers to drive the solution into the pores." After this the skin is rolled and another application is made and duly "spanked" in. This is described in the patent specifications as a "process of reducing fatty tissue." Finally the body is sponged with water, to remove any alum that may remain on the skin. Mary McGuire Wilson was granted not only a product patent on her mixture of alum, camphor, alcohol and witch hazel, but also a process patent for applying this ridiculous piece of hokum. Will the patent office never grow up, medically speaking?

A GOVERNOR AND MEDICAL PRACTICE

When the governor of the state of New York signed the Webb-Loomis bill, May 17, he issued an announcement to the voters of the state explaining his action. In that announcement, the governor pointed out that he had had the subject under consideration since the fall of 1924, and that in the interest of the public health he had continuously urged the enactment of legislation which would rid New York of illegal practitioners. An explanation of the Webb-Loomis bill appeared in our columns a few weeks ago. In his discussion of its stipulations, the governor emphasizes particularly the annual registration of all practitioners, the opportunity afforded through a grievance committee for the profession to clean its own house, the provision for prosecution by the attorney-general of all violations of the law, the establishment of minimum requirements for those practicing physiotherapy, and regulation of the use of the title "doctor." Of the latter, the governor said:

> I regard it as highly important that the ignorant and the unthinking be not misguided by the use of the title "Doctor" because it presupposes in the minds of a great many people a knowledge of the human anatomy sufficient to enable the holder of such title to diagnose and prescribe for all the ills the human body is heir to. The title "Doctor" should be made by law to mean what the great majority of people believe it means, and it should not be promiscuously bestowed upon individuals so lacking in proper qualification as to be unable to tell the difference between indigestion and hydrophobia. There is no function of government to my mind more important than the preservation of the public health.

SYPHILITIC INFECTION FROM THE CADAVER

Through long custom, one is apt to forget the dangers attendant on certain occupations and to neglect the precautions that should be taken in connection with them. It may therefore be timely to call the attention of physicians, pathologists and others who have occasion to handle cadavers to the possibility of contracting syphilis in this manner. There has been some doubt concerning the possibility of infection from the bodies of persons dying of syphilis, and the tendency exists to regard the matter lightly. The report of a number of instances and the results of recent experiments indicate, however, that the danger is actual. Erich Hoffmann[1] recently collected from the literature reports of nine certain and seven probable cases of syphilis contracted from cadavers. Since many such accidents would probably be kept secret, or at least not published, this must be far less than the actual number. He found that postmortem multiplication of spirochetes takes place not only in macerated fetuses and in the bodies of infants with congenital syphilis, but also in bodies of adults and of rabbits infected with syphilis. Motility of the organisms is retained for from twenty-four to thirty-six hours, and form and staining reactions for many days. Their virulence apparently lasts at least twenty-four hours, and Koch reported the infection of a rabbit with tissues taken from a cadaver three days after death. A few years ago, Kratzeisen[2] investigated the viability of spirochetes from six syphilitic cadavers. He found that spirochetes kept in various fluids, including water, serum and bile, multiplied for from twelve to twenty-four hours. In most cases they showed beginning degeneration only after twenty-four hours, and complete destruction at the end of seventy-two hours. They lived longest in bile, so that one would expect infection to take place most readily from the liver. From these results it would appear easy for one, in performing a necropsy on a syphilitic cadaver, to contract the infection through a scratch or abrasion in the skin.

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[1] Cramp, A. J.: Patent Office Magic—Medical, American Mercury, June, 1926.

[1] Hoffmann, Erich: Ueber Syphilisinfektion mit Leichenmaterial und eventuelles Schmarotzertum der Spirochaeta Pallida, München. med. Wchnschr. **73:** 185, 1926.

[2] Kratzeisen, Ernst: Ueber postmortale Spirochätenvermehrung in der Leiche, Centralbl. f. Bakteriol. **90:** 91, 1923.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Personal.—Dr. George E. Blue, Montgomery, was elected president of the Alabama Power Company Surgeons at the annual meeting, May 12, to succeed Dr. Aaron L. Harlan, Alexander City; Dr. Samuel R. Benedict, Birmingham, the chief surgeon, was presented with a watch by other members at this meeting.

ARKANSAS

Hospital News.—The new building for advanced cases of tuberculosis to replace the building recently destroyed by fire at the Arkansas Tuberculosis Sanatorium will be completed in June——A building being erected by the Ancient Order of United Workmen of Arkansas which will be donated to the state for a general hospital, will be ready for occupancy in July.

State Medical Election.—At the annual meeting of the Arkansas Medical Society, Hot Springs National Park, May 18-20, Dr. James M. Lemons, Pine Bluff, was elected president; Dr. Henry Thibault, Scott, president-elect; Drs. Grayson E. Tarkington, Hot Springs National Park, Thomas F. Kittrell, Texarkana, and James H. Fowler, Harrison, vice presidents; Dr. Royal J. Calcote, Little Rock, treasurer, reelected, and Dr. William R. Bathurst, secretary-editor, Little Rock, reelected. The next annual meeting will be in Little Rock.

CALIFORNIA

L. T. A. Hotten Given Two Years.—The founder of the so-called U. S. Charity Anti-Cancer League, Dr. Lewis T. A. Hotten, who was recently convicted on a narcotic charge, was sentenced, March 29, to two years in the federal prison. The records of the state board of medical examiners show, it is reported, that Hotten's name used to be Hottendorf.

Dr. Bloomfield Appointed Professor of Medicine.—Dr. Arthur L. Bloomfield, associate professor of medicine, Johns Hopkins University Medical School, Baltimore, has been appointed professor of medicine at Stanford University Medical School, San Francisco, beginning with the year 1926-1927 Dr. Bloomfield graduated from the medical department of Johns Hopkins in 1911, and has been connected with the faculty of his alma mater since 1912.

Society News.—A recent meeting of the Alameda County Medical Society was devoted to a symposium on smallpox; Dr. Newton E. Wayson, San Francisco, discussed "Epidemiology of Smallpox"; Dr. Arthur A. O'Neill, San Francisco, "Diagnosis and Treatment of Severe Smallpox"; Dr. John N. Force, Berkeley, "Administrative Application of Intradermal Methods of Vaccination."——The Women Physicians Club of San Francisco, which was recently inaugurated, now has ninety-three members, and under the guidance of its president, Dr. Louise B. Deal, joined the California Federation of Women's Clubs.—Dr. Harold Brunn, professor of surgery, University of California Medical School, addressed the San Joaquin Medical Society, April 1, on "Lung Surgery."

CONNECTICUT

Personal.—Dr. Charles G. Rankin has been appointed health officer of Glastonbury to succeed Dr. Theodore B. Ackerly.——Dr. Alfred J. Finn has been the acting health officer of Waterbury since the death of Dr. Thomas J. Kilmartin.——Dr. Howard D. F. Lockwood has been appointed health officer of Meriden to succeed Dr. Joseph A. Cooke.

Conference on Social Work.—Dr. Alice Hamilton, professor of industrial medicine, Harvard University School of Public Health, addressed the recent Connecticut Conference of Social Work, which was held at Norwich. Among the other speakers were Dr. Elton Mayo, formerly of Australia, now of the University of Pennsylvania, Philadelphia, and George W. Kirchwey, LL.D., New York.

Bulletin on Rabies.—The state department of health issued a bulletin, May 10, in which it is said that for the ten months ending April 30 the department laboratories examined seventy-five heads of animals, of which thirty-one were positive for rabies. This constitutes more examinations than has been made for a similar period in any of the preceding seven fiscal years. The bulletin also notes the precautions that should be taken to avoid exposure to rabies.

GEORGIA

University News.—Mr. A. S. Bourne, Augusta and New York, has donated to the department of internal medicine of the University of Georgia School of Medicine $5,000, which will be used for the purchase of equipment.

Personal.—Dr. Hudnall G. Weaver is serving as temporary health officer of Macon, pending the selection of a successor to Dr. Charles L. Ridley, who resigned, May 1, to become medical director of the Bankers' Health and Life Insurance Company.——Dr. William C. Humphries, Acworth, who has been appointed health officer for the city of Griffin and Spalding County, will take up his new duties, June 1.

Medical Moral Turpitude.—In a recent decision, the Supreme Court of Georgia upheld the state board of medical examiners in revoking the licenses of Drs. N. A. and T. W. Hughes, Atlanta. The court said in part that the legislature may enact that one who has been convicted of crime "involving moral turpitude" should no longer practice medicine. It was pointed out that the act of 1918 declares that a licentiate's name be removed from the records in the office of any clerk of court, and his license revoked on the ground of conviction of crime involving moral turpitude. The Hughes cases were appealed from the Fulton Superior Court, which had upheld the state board of medical examiners in revoking the licenses of Drs. N. A. and T. W. Hughes, Oct. 9, 1924, the charges by the board in each case having been, first, advertising to treat venereal diseases, and, secondly, having been convicted and sentenced in federal court in Dallas, Texas, in 1914 for using the mails for fraudulent purposes.

ILLINOIS

Naprapaths Arrested.—Perley W. Johnson and William Sandell, naprapaths of Barrington, were arrested, April 16, it is reported, on a state warrant charging them with practicing medicine without a license; they were released under $2,500 bonds.

Personal.—Dr. Cyrus H. Anderson, formerly superintendent of the Illinois State Hospital at Anna, assumed charge of the state hospital at Watertown, May 15, succeeding Dr. Joseph H. Ellingsworth, who was transferred to the state institution at Alton.——Dr. Glenn J. Tygett has resigned as city health officer of Anna and accepted a position on the staff of the Anna State Hospital.——Dr. Bellenden S. Hutcheson has been reappointed health officer of Cairo.

Hospital News.—The new Madison County Sanitarium at Edwardsville was formally opened to the public, May 7.——The new U. S. Veterans' Bureau Hospital, erected at Five Points, North Chicago, for the care of mentally ill veterans, was dedicated with appropriate ceremonies, May 15. Among the speakers at the ceremonies were Gen. Frank T. Hines, Washington, D. C., director of the Veterans' Bureau; Mr. Scott W. Lucas, commander of the American Legion, Department of Illinois, and other distinguished civilians.——Springfield's new $100,000 contagious disease hospital was opened, May 13.

Chicago

Rush Alumni Clinics.—Rush Medical College will conduct, June 14-18, a clinic week for the benefit of its alumni, which will become an annual event if it proves of general interest. Members of the faculty have heartily responded to the plan, and suggestions from the alumni, addressed to Rush Medical College, Harrison and Wood streets, will be appreciated. The annual faculty and alumni dinner will be at the Auditorium Hotel, June 15, 7 p. m. Among other reunions, the 1916 class will hold its tenth anniversary at this time.

Conference on Tuberculosis.—Special features at the Mississippi Valley Conference on Tuberculosis, Chicago, June 14-16, Edgewater Beach Hotel, will be the annual banquet, a child health education luncheon, a seal sale conference, and a secretaries' luncheon; among the topics for discussion will be the education of the layman, after-care and employment of the tuberculous, chest surgery, and tuberculosis in industry. Dr. Linsly R. Williams of the National Tuberculosis Association; Charles E. A. Winslow, Dr.P.H., president American Public Health Association; Dr. James A. Britton, Chicago; Dr. Anthony J. Lanza, New York; Drs. John M. Dodson, Frank L. Rector and Morris Fishbein, all of Chicago, will address the conference.

Society News.—Dr. Carl Beck addressed the Chicago Medical Society, May 26, on "Medicine in Europe."——The annual meeting of the Chicago Neurological Society was held at the new prison at Statesville, May 22; among others, Dr. Sanger Brown, president, gave an historical sketch of the society; the scientific program was in charge of Dr. Herman M. Adler and his assistants.——Dr. Agnes V. Fuller addressed the Chicago Council of Medical Women, May 25, on "Cesarean Section."——At the recent annual meeting of the Chicago Tuberculosis Society, Dr. Henry C. Sweany was elected president; Dr. Hiram H. Bay, vice president, and Dr. Walter H. Watterson, Maywood, secretary.——Dr. Edward S. Blaine has been elected president of the Chicago Roentgen Society; Dr. Walter T. Bronson, vice president, and Dr. Robert A. Arens, secretary-treasurer.

KANSAS

State Medical Election.—At the annual meeting of the Kansas Medical Society, Kansas City, May 4-6, Dr. Francis A. Carmichael, Osawatomie, was elected president; Dr. Benjamin F. Morgan, Clay Center, president-elect; Drs. Earle G. Brown, Topeka, Ivan B. Parker, Hill City, and Jonathan B. Carter, Wilson, vice presidents; Dr. John F. Hassig, Kansas City, secretary, and Dr. George M. Gray, Kansas City, treasurer.

Personal.—Dr. Roland G. Breuer has resigned as assistant superintendent of the Kansas State Tuberculosis Sanatorium at Norton to accept a position in Cincinnati as medical director of a pharmaceutical company.——Gerald W. Smith, Pittsburg, Kan., and Fred E. Angle, Kansas City, members of the senior class at the University of Kansas School of Medicine, have received appointments as assistant surgeons, lieutenant, junior grade, in the U. S. Navy Medical Department, and will report for duty, July 1; the appointments followed examinations held, January 4, at Great Lakes Naval Training Station, Ill.

Society Bestows Gold-Headed Cane.—The Rice County Medical Society celebrated the fiftieth anniversary of the graduation in medicine of Dr. Powhatan P. Trueheart at a dinner in Sterling, March 25, and commemorated the event by presenting to the guest of honor a gold-headed cane, bearing the inscription "1876-1926 Dr. P. P. Trueheart. From Rice County Medical Society." Dr. Trueheart spoke on "Then and Now," to which Drs. Charles E. Fisher and Horace G. Welsch and Mr. W. B. Wirshing responded; six physicians who began the study of medicine in Dr. Trueheart's office were assigned to speak on "One of His Boys." All members of the society were present except two, who were unavoidably absent.

MAINE

State Medical Meeting.—The seventy-fourth annual meeting of the Maine Medical Association will be at Poland Springs, June 10-12, under the presidency of Dr. Joseph D. Phillips, Southwest Harbor. The house of delegates will meet Thursday, 7:30 p. m., at the Riccar Inn, and the council at the close of the meeting of the house of delegates. Dr. Wendell C. Phillips, New York, President of the American Medical Association, will deliver the address at the banquet, Thursday evening; other visiting speakers will be Dr. John B. Deaver, Philadelphia, "Surgical versus Medical Treatment of Gallbladder Diseases"; Dr. Joseph Muir, New York, "Radiotherapy of Cancer of the Uterine Cervix," and Dr. Fred J. Tees, Montreal, "Treatment of Some of the Commoner Fractures." There will be a symposium on obstetrics, Saturday morning, by Drs. Leonard H. Ford, Bangor; Harold W. Garcelon, Auburn; Adam P. Leighton, Jr., Portland; Ralph L. Reynolds, Waterville, and Foster S. Kellogg, Boston. Entertainment has been provided for the ladies, and a golf tournament arranged for Saturday afternoon.

MASSACHUSETTS

Hospital News.—The new St. Luke's Hospital, Pittsfield, was formally opened, April 18, under the management of the Sisters of Providence. The hospital is five stories high with a complete hospital unit on each of the four upper floors. There are seventy-five private rooms, eight small wards, and ten rooms of two beds each. When fully completed, the investment will represent about a half million dollars.

Society News.—Dr. Milton C. Winternitz, dean, Yale University Medical School, New Haven, Conn., addressed the Fall River Medical Society, April 8, at its annual dinner on "Recent Advances and Studies in the Pathology of the Cardiovascular System," illustrated by photomicrographs.——Dr. George F. MacKay, Dalton, has been elected president of the Berkshire District Medical Society, and Dr. A. C. Smith, president of the Plymouth District Medical Society.

Study of Tropical Diseases.——The *Boston Globe*, May 14, announces that Dr. Richard P. Strong, professor of tropical medicine, Harvard University Medical School, will lead an expedition to Liberia next month, for the purpose of studying tropical diseases and the effects of certain remedies on them. Other members of the party will be Dr. George C. Shattuck, Joseph Bequaert, Ph.D., and Glover M. Allen, Ph.D., secretary, Boston Society of Natural History. Max Theiler, also a botanist, a photographer and a zoologist, will be in the party.

State Medical Meeting.—The one hundred and forty-fifth annual meeting of the Massachusetts Medical Society will be held at the Hotel Kimball, Springfield, June 8-9, under the presidency of Dr. James S. Stone, Boston. The secretaries of the district medical societies will have a luncheon at 1 p. m., Tuesday, and various scientific sections will meet at 2 p. m. There will be a symposium on peptic ulcer in the section on surgery, in which Drs. Charles L. Connor, Boston, Ernest L. Davis, Springfield, Frank H. Lahey and Franklin W. White, both of Boston, Albert A. Berg, New York, and Charles H. Mayo, Rochester, Minn., will take part. Among others, Drs. James A. Miller, New York, and Wyman Whittemore, Boston, will address the section on tuberculosis, and Dr. Leo V. Friedman, Boston, and George W. Kosmak, New York, the section on obstetrics and gynecology; Tuesday evening, Dr. William Darrach, New York, will deliver the Shattuck lecture, his subject being "The Interrelations of the Physician and the Hospital." The section on medicine which meets Wednesday morning at 9 o'clock will be addressed by Drs. Charles H. Lawrence, Jr., Boston; Burton E. Hamilton, Boston, and Henry S. Plummer, Rochester, Minn. Among others, Dr. Donald S. King, Boston, will address the section on pediatrics on "The Relation of the School Physician to the Family Doctor," and Dr. Edwin T. Wyman, Boston, the section on radiology and physiotherapy on "Clinical Application of Ultraviolet Rays." Dr. Charles F. Painter, Newton, will deliver the annual discourse, Wednesday afternoon on "Educational Requirements for Twentieth Century Practice: Who Should Determine Them and How They May Be Best Achieved?" The annual dinner will also be Wednesday afternoon, and on Wednesday morning a "college town" automobile trip for ladies to Mount Holyoke, Amherst, Massachusetts Agricultural and Smith colleges.

MINNESOTA

University News.—Dr. Leon Velasco Blanco of the University of Buenos Aires visited the University of Minnesota in April to arrange for an exchange of professors of the medical schools of the two universities for next year.

Dr. Taylor Honored.—The Minnesota Trudeau Medical Society gave an anniversary dinner at the Masonic Temple, St. Paul, May 17, in honor of Dr. Henry Longstreet Taylor, and to commemorate his founding the first permanent tuberculosis sanatorium in the state. Dr. Arthur A. Sweeney was toastmaster, and the speakers were Dr. Robinson Bosworth, superintendent, Municipal Sanatorium, Rockford, Ill., and Dr. Pearl M. Hall, superintendent, Minnesota State Sanatorium, Ah-gwah-ching. Dr. Taylor has been engaged in antituberculosis work since 1893; he opened the Pokegama Sanatorium, the first permanent institution for the treatment of tuberculosis in Minnesota, in 1905; he was elected president of the Minnesota Public Health Association in 1924, and a vice president of the National Tuberculosis Association in 1925.

MONTANA

State Medical Meeting.—The annual meeting of the Montana Medical Association will be at Billings, July 16-17, following the meeting of the Montana Health Association, July 14-15, and that of the Montana Academy of Oto-Ophthalmology; among the visiting speakers will be Drs. William J. Mayo, Rochester, Minn.; Lawrence Webster Fox, Philadelphia; Morris Fishbein and Henry Schmitz, both of Chicago; Frederick M. Allen, Morristown, N. J., and Arthur D. Dunn, of the University of Nebraska. Entertainment has been arranged to include golfing, fishing, swimming and trips to the mountains for those who remain over Sunday, the eighteenth.

Rocky Mountain Spotted Fever.—There had been twelve cases of spotted fever this season reported to the state board of health up to May 12, a smaller number than usual. A fatal case was reported as occurring in Mineral County, and was the first case ever reported as occurring there. Three cases occurred in Ravalli County, with one death: the two patients that recovered had each had one dose of vaccine; two fatal cases occurred in Missoula County; two cases were reported from the vicinity of Malta, two in Garfield and one each in Golden Valley and in Wheatland County. The vaccine developed by Drs. Spencer and Parker, working for the U. S. Public Health Service in cooperation with the state board of entomology, is not yet available for general distribution, but more than 500 people in the Bitter Root Valley have been vaccinated this year. The state board requests physicians to report promptly any cases coming under their observation.

NEW YORK

Hospital News.—Governor Smith signed an act, May 6, appropriating $12,500,000 for the improvement of state hospitals; this money will be taken from the $50,000,000 hospital bond issue; a similar sum was appropriated last year.

Mental Clinic.—Dr. George W. Goler, city health officer, Rochester, announces that a city mental clinic will be started, September 1, in cooperation with the University of Rochester School of Medicine. The schools and various other organizations are requested to send "problem cases" to the clinic.

Personal.—Rowan Whealdon, field secretary of the Oregon Tuberculosis Association, has been appointed executive secretary of the Cattaraugus County Tuberculosis and Public Health Association to succeed John Armstrong, who has been promoted to director, Bureau of Health Education of the Cattaraugus County Department of Health.

Health at Albany.—Telegraphic returns from sixty-nine cities with a total population of about 29,000,000 for the week ending May 8 indicates that the highest mortality rate (22.6) was for Albany, and that the mortality rate for the group of cities was 14.5. For the corresponding week last year the mortality rate for Albany was 16.4, and for the group of cities, 13.3.

New York City

Society News.—Dr. George E. Brewer addressed the West Side Clinical Society, May 13, on "Military Surgery."——Drs. Readie G. Snyder and Solomon Fineman will address the Medical Society of the County of New York, May 24, at the Academy of Medicine on "A Clinical and X-Ray Study of High Colonic Irrigations in the Therapy of Subacute and Chronic Arthritis."

Promotions at Columbia University.—Nicholas Murray Butler, president of Columbia University, announced, May 9, says the New York *Times*, the following promotions on the faculty of the College of Physicians and Surgeons: Drs. Louis Bauman, Henry T. Chickering, Robert L. Levy and I. Ogden Woodruff to be assistant professors of clinical medicine; Drs. George C. Andrews, Jr., and Abernethy Benson Cannon, to be assistant professors of dermatology; Dr. Hugh Auchincloss, to be professor of clinical surgery; Dr. William C. Clarke, professor of experimental surgery; Dr. Fordyce B. St. John, professor of surgery, and Dr. George M. MacKenzie, to be associate professor of medicine.

Promotions at Post-Graduate School.—At the recent annual meeting of the faculty of the New York Post-Graduate Medical School and Hospital, the following promotions were announced:

Dr. James L. Joughin, professor, department of neurology.
John A. Killian (Ph.D.), professor of biochemistry, department of laboratories.
Dr. Michael Osnato, professor, department of neurology.
Dr. John D. Stewart, professor of rectal diseases, department of surgery.
Dr. M. Uribe Troncoso, professor, department of ophthalmology.
Dr. Marvin F. Jones, associate professor, department of otology.
Dr. Jerome Selinger, associate professor, department of surgery.
Dr. Dudley D. Stetson, associate professor, department of dermatology.
Dr. Adolph Jacoby, assistant professor, department of gynecology.
Dr. Roy D. Duckworth, assistant professor, department of roentgenology.
Otto Glasser (Ph.D.), assistant professor of biophysics, department of roentgenology.

Tuberculosis Dispensaries.—Thirty-one tuberculosis clinics are included in the Association of Tuberculosis Clinics of the City of New York; nineteen of them are maintained by the city, four by the department of Bellevue and Allied Hospitals, and eight by various other hospitals, and the Brooklyn Tuberculosis Committee. At the recent annual meeting of the association, it was announced that 40,973 persons were examined during 1925, and of these 11,210 were found to be tuberculous. The clinics were instrumental in placing in hospitals and sanatoriums 2,755 patients, or 35 per cent of all the tuberculosis cases disposed of during the year. The visiting nurses of the clinic staffs cover every part of the city. There were 20,840 new patients admitted to the clinics in 1925. Dr. Louis I. Harris, health commissioner, was elected president of the tuberculosis clinics for 1926, and Dr. Max Taschman, vice president.

NORTH CAROLINA

Dean Kitchin Resigns.—Dr. Thurman D. Kitchin, since 1917 professor of physiology and pharmacology, and since 1919 dean at the Wake Forest College School of Medicine, Wake Forest, has tendered his resignation to the board of trustees, effective at the close of the present term. Dean Kitchin plans to return to his former home, Scotland Neck, to resume the practice of medicine.

Anti-Evolution League.—The North Carolina Anti-Evolution League has been chartered by the secretary of state with the avowed purpose of creating public sentiment which will prevent the teaching in schools of the state supported by public taxation of any theory of the origin of man which conflicts with the views of the members of the league; to promote its purposes, the league expects to raise $50,000.

Society News.—Prof. L. H. Snyder of the State College at Raleigh, who was guest of honor at a banquet given by the Wayne County Medical Society, Goldsboro, April 2, gave an address on "Human Blood Groups: Their Inheritance and Racial Significance."——Among the speakers at the May 11 meeting of the Sixth District Medical Society, Wake Forest, were Dr. Stuart McGuire, Richmond, Va., and William L. Poteat, president of Wake Forest College, who spoke on "The Trend of Modern Scientific Methods and Their Influence on Thought." Dr. Thurman D. Kitchin, Wake Forest was elected president of the society, and Dr. Burton W. Fassett, secretary.——At the semiannual meeting of the Tenth District Medical Society, Waynesville, May 5, Dr. Emanuel Libman, New York, gave an address; Dr. Watson S. Rankin, Charlotte, spoke on "The Need for Community Hospitals and the Aid to Be Given Free Beds by the Duke Endowment."——Dr. Andrew J. Crowell, Charlotte, addressed the New York Academy of Medicine, May 23, on "The Curve of Phthalein Excretion: Its Interpretation and Clinical Use." ——Dr. Paul D. White, Boston, recently addressed the Mecklenburg County Medical Society, and was guest of honor at a dinner given by former fellow officers in the A. E. F.——Dr. Paul H. Ringer, Asheville, addressed the congregation of the Old Calvary Episcopal Church, Sunday, May 16, on "What Has Medicine to Do with Religion?"

OHIO

Summer Courses.—The University of Cincinnati College of Medicine announces that its summer courses will open, June 14, and continue for eight weeks; the courses to be given are biochemistry, physiology and bacteriology; all of them are of regular university grade, and full college credit will be given for the number of hours officially published with the course.

State Medical Election.—At the annual meeting of the Ohio State Medical Association, Toledo, May 11-13, Dr. Leora G. Bowers, Dayton, was elected president; Dr. Leslie L. Bigelow, Columbus, president elect; Dr. Herbert M. Platter, Columbus, treasurer, and Mr. Don K. Martin, Columbus, executive secretary, 131 East State Street, Columbus.

Classes for Crippled Children.—Twenty-one cities in Ohio have special classes for crippled children. According to the Ohio Society for Crippled Children, Ohio leads other states in home instruction, furnished for children who cannot be transported to the special classes. While New York has a larger number of classes for crippled children (114), 105 of them are located in New York City, and the only cities having such classes are Buffalo, Rochester and Binghamton; private agencies in New York maintain special classes in five other cities.

Personal.—Dr. William G. Rhoten, Logan Health Officer, Hocking County, has resigned, effective, June 1, to become the health officer of Wooster and Wayne County.——Dr. Robert H. Riley, assistant director, State Department of Health of Maryland, spent some time in Columbus investigating health administration in Ohio.——Dr. John P. Spooner, Toledo, recently presented thirty bound volumes of The Journal of the American Medical Association to the Library of the Academy of Medicine of Toledo and Lucas County.——Dr.

Dorsey W. Fellers, Bloomville, has been reelected a member of the Seneca County Board of Health for five years.

PENNSYLVANIA

Damage Suits Following Epidemic.—Nine residents of New Milford have brought damage actions, aggregating $170,000, against the New Milford Water Company, following the recent outbreak of typhoid in that village. According to the New York *Times*, there were eighty cases of typhoid fever and several deaths, and health officials declared that the source of the epidemic was in the water supply (The Journal, March 27, p. 961).

Distribution of Income from Frick Estate.—Judge Mitchell of Orphans Court, Pittsburgh, ordered the distribution of more than $1,000,000 to beneficiaries of the residuary estate of the late H. C. Frick, the sum representing income from the estate. Among the beneficiaries were various Pittsburgh hospitals and charitable and educational institutions; Princeton University receives $300,000; Massachusetts Institute of Technology, $100,000 and the Society of the Lying-In Hospital, $30,000.

County Public Health Associations.—The work of organizing county health associations in Pennsylvania is progressing satisfactorily; according to the state secretary of health, the plans now involve the organization of all the counties in the state before Dec. 31, 1926; Beaver, Bradford, Centre, Clearfield, Delaware, Erie, Lackawanna, Lawrence, Luzerne, Mercer, Northampton, Schuylkill and Tioga will be organized in the near future. The Allegheny Public Health Association recently held its second annual meeting in Pittsburgh, and the Bedford County Public Health Association recently held its second meeting. The county units are members of the state public health association, and are the means of standardizing and disseminating preventive and constructive health work throughout the state.

Society News.—Dr. Walter E. Dandy, Johns Hopkins Hospital, Baltimore, delivered the R. W. Stewart Memorial Lecture before the Pittsburgh Academy of Medicine, May 6, on "The Diagnosis and Localization of Brain Tumors."——The Women's Auxiliary of the Philadelphia County Medical Society presented a Steinway piano at the dedication of the society's new home in April; the directors of the medical society have assigned one room in the building for the use of the auxiliary.——Dr. Francis Carter Wood, New York, gave a postgraduate lecture before the Allegheny County Medical Society, Pittsburgh, May 27, on "The Blair Bell Lead Treatment for Cancer."——The Pittsburgh Ophthalmological Society gave a dinner, May 28, at the University Club in honor of Prof. Leonhard Koeppe of the University of Halle, Germany, who addressed the society on "Early and Differential Diagnosis of Several Forms of Cataract with the Slit Lamp."

Philadelphia

Personal.—Alba B. Johnson, former president of the Philadelphia Chamber of Commerce and for many years closely identified with Jefferson Medical College, has been elected president of that institution to succeed the late William Potter.

Prizes to Undergraduates.—The dean of the University Pennsylvania Medical School announced, May 2, that Eugene M. Landis, Philadelphia, for the third consecutive year had won the first prize for the best piece of research to be done by a medical student of the university; L. A. Rademaker, Tacoma, Wash., received second prize, and S. David Glusker, Brooklyn, received the third prize.

Society News.—Dr. Wilmer Krusen, director of health, was the guest of honor at the eightieth annual anniversary banquet of the Northern Medical Association, Philadelphia, Majestic Hotel, May 17.——Dr. Harold H. Marvin, Yale University Medical School, New Haven, Conn., addressed the Rush Society at the College of Physicians, May 18, on "Use and Choice of Diuretics in Cardiac Patients."——The Medical Club of Philadelphia held a reception at the Bellevue-Stratford Hotel, May 27, in honor of the surviving original members, of whom there are fourteen.——Dr. Frederick S. Baldi has been nominated as 1927 president of the Philadelphia County Medical Society, and Dr. Isidor P. Strittmatter, president-elect; Dr. Orlando H. Petty, vice president, and Drs. Henry G. Munson and Edward A. Shumway, secretary and treasurer, respectively, to succeed themselves; at this meeting the society voted to change the by-laws so as to permit the nomination and election of a president-elect, so that he may become familiar with the business of the society before induction into office.

TENNESSEE

State Medical Election.—At the annual meeting of the Tennessee State Medical Association, Memphis, May 11-13, Dr. Ernest R. Zemp, Knoxville, was elected president; Drs. Thomas B. Yancey, Kingsport, William F. Cannon, Fayetteville, and James L. Dunavant, Henning, vice presidents; Dr. John O. Manier, Nashville, treasurer, and Dr. Joseph F. H. Gallagher, Nashville, secretary-editor.

New Medical Organizations.—After many years of inactivity, the Warren County Medical Society has reorganized; Dr. Elbert L. Mooneyham, Rock Island, was elected president, and Dr. John S. Harris, McMinnville, secretary.——After five years of inactivity the Morgan County Medical Society has been reorganized; Dr. William E. Gallion, Oakdale, is secretary-treasurer.——The Giles County Medical Society has also been reorganized with Dr. James P. K. Blackburn, president; Dr. James A. LaRue, secretary, and Dr. George D. Butler, treasurer, all of Pulaski.

TEXAS

Society News.—Major Shelley U. Marietta, Medical Corps, U. S. Army, addressed the Bexar County Medical Society, recently, on "Indications for Surgical Procedure in Pulmonary Tuberculosis," and the discussion was opened by Lieut. Col. Raymond F. Metcalf, U. S. Army, stationed at Fort Sam Houston.

Hospital News.—An anonymous donor has given $75,000 to be applied on building a modern hospital for the negroes of Houston, the site for which has already been purchased. The gift will be supplemented by a gift from the city.——The contract has been let for the construction of the Fred Roberts Memorial Hospital at Corpus Christi, to cost about $60,000.

"Divine Healer" Convicted.—Mrs. Clyde Bell, Fort Worth, was found guilty of practicing medicine without a license by a jury, April 23, and sentenced to one hour in jail and a $100 fine, it is reported. The *Texas State Journal of Medicine* says that a patient testified that Mrs. Bell promised to cure a cancer of the breast by laying her fingers on the tumor; the patient was given some pills also and was charged $140.

WISCONSIN

Society News.—Dr. Clifford G. Grulee, Chicago, addressed the Milwaukee Pediatric Society at the Milwaukee Children's Hospital, April 14, on "The Intraperitoneal Transfusion of Citrated Blood in Anemia Pseudoleukemia, von Jaksch-Hayem Disease."

Personal.—Dr. John J. Bowes, assistant superintendent of the Central State Hospital for the Insane at Waupun, has resigned.——Dr. Charles Reineck has been elected chairman of the board of health of Appleton.——Arthur S. Pearse, Ph.D., professor of zoology, University of Wisconsin, has resigned to accept a professorship in Duke University, Durham, S. C.; Dr. Pearse is now on leave studying in the London School of Tropical Medicine.

Dr. Brown Resigns.—The State Board of Control of Wisconsin has accepted the resignation of Dr. John F. Brown as superintendent of the Central State Hospital for Insane, Waupun, who has been in poor health for some time. Dr. Brown, according to the *Wisconsin Medical Journal*, has been superintendent of this hospital since 1919, and has been associated with state institutions for twenty-three years, serving as superintendent of the school for the blind at Janesville, superintendent and physician at the School for Dependent Children at Sparta, and as physician at the state prison for seven years.

GENERAL

Pacific Northwest Medical Association.—This association will meet at Spokane, Wash., July 1-3, at the Davenport Hotel. Among the speakers will be J. B. Collip, Ph.D., and Drs. George W. Holmes, Boston; E. H. Mason, Montreal, Canada; Harry L. Parker, Rochester, Minn.; George Dock, Pasadena, Calif.; Arthur Steindler, Iowa City, and John Whitridge Williams, Baltimore.

Health Survey of Mexico.—Frederick L. Hoffman, LL.D., consulting statistician, Prudential Insurance Company of America, will leave New York, June 10, to make a comprehensive survey of health conditions and methods being used in Mexico to eradicate disease. Dr. Hoffman will be accompanied by two assistants, and after a study of the native Indian population in Arizona and New Mexico will begin the Mexican survey at Nogales, and then go to Guadalajara, Mexico City, Vera Cruz, Yucatan, Oaxaca, the Isthmus of Tehuantepec, and possibly into Central America

Questionnaires Deplored.—At the twenty-third annual meeting of Experimental Psychologists, held at the University of Pennsylvania, Philadelphia, April 5-7, a resolution was adopted as follows

> *Resolved*, That this meeting deplores the increasing practice of collecting administrative or supposedly scientific data by way of questionnaires, and
>
> That the meeting deplores especially the practice under which graduat students undertake research by sending questionnaires to professional psychologists

American Journal of Surgery Changes Publishers.—With the May issue, the *American Journal of Surgery* passes into the hands of Paul B Hoeber, Inc, New York The editor continues to be Dr Walter M Brickner, with whom will be associated a new editorial board The publisher announces in the current issue a gradual elimination of advertising, except that which meets the standards of the Council on Pharmacy and Chemistry and the Council on Physical Therapy of the American Medical Association The publisher also announces an increase in the size and improvement in typography Special attention will be given to general industrial and traumatic surgery, anesthesia and physical therapy

Directory of Otolaryngologists—The American Board of Otolaryngology has just issued a directory of those physicians who have successfully passed the examination and received their certificates which signify that the holders are, in the minds of the board, duly qualified to practice in the field of otolaryngology In the directory of the American Medical Association, there are more than 6,000 physicians who are endeavoring to specialize in the field of otolaryngology Most of these are general practitioners who have had no special preparation and could not receive the certificate from the American Board of Otolaryngology The directory which has just been issued by the board will assist physicians as well as patients, in finding out what men in the various centers have had the preparation that qualifies them to practice in this field

Smallpox in 1925.—Reports received from state health officers by the American Association for Medical Progress indicate that more smallpox was reported in the United States during 1925 than in any other country except India The total number of cases reported was 43,193, which is an improvement over the preceding year, when the total number was 56,351. While most of the states did not report whether the patients had been vaccinated or not, this fact was reported for most of the cases from seventeen states and the District of Columbia, and among 10 636 cases so reported, 9,660 of the patients had never been vaccinated, and 751 had been vaccinated from seven to fifty years previously Thirteen states each reported more than 1,000 cases of smallpox in 1925, California leading the list with 4,921, Alabama was second with 4,288, and Ohio third with 4,018 The six New England states altogether had only 102 cases, ninety-four of which were in Rhode Island

Society News.—At the annual meeting of the American Radium Society, Dallas, Texas, April 19 20, Dr Albert Soiland Los Angeles, was elected president, Dr Curtis F Burnam Baltimore, president-elect, Drs Burton J Lee, New York, and Edward H Skinner, Kansas City, Mo, vice presidents, Dr Edwin C Ernst, St Louis, secretary, and Dr Sanford M Withers, Denver, treasurer ——The American College of Physicians will hold its eleventh annual clinical congress at Cleveland the week of Feb 20, 1927 Further details may be obtained by writing Mr E R Loveland, executive secretary, c/o The Covington, Thirty-Seventh and Chestnut streets, Philadelphia, Dr John Phillips, Cleveland, has been elected general chairman of the congress ——At the annual meeting of the American Association of Genito-Urinary Surgeons, May 12, Dr James A Gardner, Buffalo, was elected president, and Dr William C Quinby, Peter Bent Brigham Hospital, Boston, secretary The next annual session will be at Atlantic City

Bovine Tuberculosis Decreasing—The percentage of tuberculous cattle in the United States decreased from 4 per cent in 1922 to 2 8 per cent in 1926, according to a survey completed, May 1, by the U S Department of Agriculture This has been brought about by cooperation between federal state and county forces, and indicates that by 1936 about 31 per cent of the country will have reduced the percentage of bovine tuberculosis to less than 0 5 per cent The proportion of diseased cattle now varies from more than 23 per cent in some counties to less than 0 5 per cent in others. Most of the infection is confined to a comparatively small area, about 73 per cent of the reactors yet to be condemned being in 411 counties, the other 27 per cent of diseased cattle are scattered throughout the remaining 2,658 counties, where the average infection is less than 3 per cent The department of agriculture states that it is comparatively easy, when funds are available, to free any county of bovine tuberculosis which has less than 3 per cent infection, and that the problem is one of proper initial testing and sufficient quarantine measures to protect against reinfection

FOREIGN

Tax Stays on Nobel Fund.—The Swedish Parliament has rejected a proposal to remove the tax from the Nobel Prize Fund, which, according to *Science*, was made by members of all political parties Sweden has had, from the beginning of the fund, an income from this tax of 10,000,000 crowns, last year, it is said, the tax was higher than the prize sum given in that year

Berlin Charlatan Goes to Prison.—The Potsdam court has sentenced to four years' imprisonment a drugless practitioner, a former mechanic, on account of the death of a girl in diabetic coma after he had been treating her for eighteen days She had been treated in a sanatorium and had been instructed to keep up the insulin treatment, but the charlatan told her to eat sugar, honey and other sweets instead, which induced fatal coma on the sixteenth day. The state prosecutor had asked for a penalty of two and a half years' imprisonment but the court imposed four years The case is described in the *Deutsche medizinische Wochenschrift* 52:370, 1926

Strike at Canton Hospital—The South China Branch of the China Medical Association unanimously adopted a resolution April 8, protesting against the inhuman action of the Miscellaneous Workers Union, which ordered all workers of the Canton Hospital Canton, China, to leave their work and the hospital premises and caused the hospital gates to be picketed preventing Chinese patients and others from entering the hospital preventing food being taken into the hospital for Chinese patients and staff, and cutting the water and telephone services When this resolution was passed, the pickets were still at all the gates of the hospital armed with clubs The Canton Hospital the resolution says, introduced modern medicine into China, and for ninety years has served the community as a charitable medical institution

Personal.—Prof M Couto president of the Brazilian Academy of Medicine was tendered a reception by the French Academie de medecine at Paris He presented the president, Professor Bar, with the diploma appointing him an honorary member of the Brazilian organization, with the symbolic collar and address of tribute from the Rio Academy He also delivered an address on "The Syndrome of Perforation of the Aorta"——The radiologist of the Bretonneau Hospital, Paris M Lobligeois, has had an arm amputated, the fourth operation since 1925 for professional injury. Dr G Piana radiologist of the Genoa public hospital, is another victim of radiologic professional injury, requiring amputation of the left arm ——The conference on physical training and school hygiene of the Northland is to meet at Copenhagen in August Dr H P T Ørum is in charge of the arrangements ——Dr E Roesle, Berlin, has been appointed a member of the international committee for standardizing vital statistics The next revision of the nomenclature is to be made in 1927, and the work is already under way ——Dr Albert Grotjahn, Berlin professor of social hygiene, has been appointed corresponding member of the League of Nations' committee for educating the public in hygiene ——Prof L Morquio, Montevideo, delivered an address at Paris on "Hydatid Cysts in the Lungs in Children" He was the delegate from Uruguay to the recent International Child Welfare Congress at Geneva.

Deaths in Other Countries

Dr John William Smith, emeritus professor of surgery, Victoria University of Manchester, England, April 13, aged 61 ——**Dr T. Wyder**, professor of gynecology, Zurich, author of an "Atlas for Gynecologic Examination" and other works, aged 72 ——**Dr K. Reifferscheid**, professor of gynecology, Gottingen, aged 53 ——**Dr Jules Glover**, Paris, the laryngologist of the Conservatoire de musique, whose application of electric auscultation to different parts of the body has proved useful in aviation ——**Dr F. Lentz**, Tournai, formerly president of the Belgian Académie de medecine, aged 86 ——**Dr M Henseval**, professor of bacteriology at Ghent, aged 52 ——**Dr Carl Ruge**, Berlin, aged 79, author of a "Manual of Gynecologic Diagnosis"——**Dr Bartolome Podesta**, Buenos Aires, was shot and killed, May 11, by an unknown assailant

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 8, 1926.

Death of Dr. Axham

Dr. Axham has died at the age of 86. He had been in failing health for some time. His name was removed from the Medical Register in 1911 because he acted as anesthetist to Mr. Barker the bone-setter, and because he refused to discontinue this service. When the honor of knighthood was conferred on Mr. Barker, it was widely felt by the public that Dr. Axham should not longer remain under the ban of his profession, many of the most prominent members of which had publicly expressed their admiration of Sir Herbert Barker's work. An effort therefore was begun to induce the general medical council to reconsider its decision. This attracted the widest public attention and assumed, in a short time, the dimensions of an agitation. The general medical council, however, declared that it was powerless in the matter. Dr. Axham's professional qualifications, which entitled him to registration, had been removed. In this impasse, his supporters turned to the Royal College of Surgeons, but this body refused to listen to them. The Royal College of Physicians of Edinburgh, however, of which body Dr. Axham had been a licentiate, gave him back his license. Then a further appeal to the general medical council was made, and it was urged that a special meeting should be called to consider the Axham case. This request was refused. The case was set down for hearing in the coming summer session of the council. As might be expected from the previous reports in The Journal on the case, Dr. Axham's death has aroused general sympathy in the lay press and criticism of the general medical council, which on the whole is moderate. The *Times* says: "The Axham case is now closed, and the opportunity which the general medical council had of performing a singularly attractive act of grace has gone. But the public issues raised by this case still remain. At the time when his name was removed from the medical register, Dr. Axham addressed to us a letter in which he set forth clearly and in dignified language the reasons which had impelled him to give assistance to Mr. Barker. Dr. Axham, then nearing 65 years of age, was at great pains to satisfy himself, before he took the most momentous step of his life, that this step was in fact his duty. He paid forty-five visits to Mr. Barker's consulting room. He saw 'several kinds of joint injuries, deformities and displacements treated entirely by manipulation, such as is not practiced at any hospital in the metropolis.' His decision exercised an important effect in bringing to the notice of the medical profession the value of manipulative surgery. Other journals are less restrained and describe Dr. Axham as a 'medical martyr' and refer to a 'vendetta against an aged doctor even when he stood on the threshold of eternity.' A demand is made by several journals for the reconstitution of the general medical council. In its obituary notice the *Lancet* states that 'the medical profession had much sympathy with Dr. Axham in the late phases of the contentions around him, though quite aware that the criticisms directed against the general medical council were frequently erroneous.'"

Health of the Army

The importance of health among soldiers, whether on active service or under peace conditions, is emphasized by the publication of the Army Manual of Sanitation (1926), designed especially for regimental officers and other ranks. It is pointed out that a large proportion of the diseases of armies is preventable, and as a rule many more men are lost through disease than through enemy action. Though losses from disease are more acutely felt during a campaign than in time of peace, yet the waste of men's services in peace time through preventable disease is a serious matter to the army. A chapter of the manual is devoted to environment in relation to health, in which many points peculiar to the soldier are dealt with. For instance, it is stated that a man can carry a marching load equal to one third of his own weight without undue exertion, but any marked excess over this amount means that fatigue will set in rapidly and the increased work requires a greatly increased supply of food; and, again, a soldier in marching order may lose by perspiration alone nearly a quart of water during a march of 8 miles, even in a temperate climate. The chapter which deals with sanitary organization on active service states that the sanitary organization of an army in the field is based on three principles: First, the commander of every unit and formation is responsible for the sanitary condition of the quarters or localities occupied by his command; second, every commander has available a representative of the medical services responsible for giving advice and technical recommendations; and, finally, special sanitary personnel is provided in all units, formations and areas to supervise and carry out sanitary measures beyond the skill or training of the troops.

Drug Addiction

The prevention and arrest of drug addiction was dealt with by Sir William Willcox, in a presidential address before the Society for the Study of Inebriety. He said that drug addiction was not very prevalent in this country, but parts of the British empire were places where addiction drugs were being grown and produced, and in parts of the empire drug addiction was very prevalent. In America, drug addiction was a serious problem indeed, and it had been estimated that in the United States there were more than a million drug addicts, and in the city of New York 1.8 per cent of the population were addicts. Drug addiction is a disease rather than a vice, said Sir William, and, like other diseases, it is infectious. It is spread by psychotherapeutic methods, one person influencing another. Drug addiction is a real menace to the world, and it is necessary that Britain should play its part in the fight against it. We were immeasurably more successful in this country in controlling traffic in addiction drugs than were the Americans, and an enormous amount of drugs got to the public in America by illegal ways. It was important that members of the medical profession should realize that it was only in exceptional cases that morphine and such drugs should be prescribed, especially hypodermically. Other drugs should, if possible, be administered, and these dangerous drugs should never be employed for the relief of mental strain, worry, grief or distress.

Mild Outbreak of Influenza

A considerable, though mild, outbreak of influenza is in progress in most parts of the country. The type of the disease seems to be "gastric," and the symptoms complained of, in most cases, are headache, dyspepsia and lassitude. The condition tends to recur at short intervals, so that some of the victims are ill over several weeks. This is the thirty-fourth week, calculating from the week beginning Nov. 12, 1921, that a sharp epidemic began. Season after season confirmation has been furnished of the observation of Dr. Brownlee that influenza shows a definite periodicity. So far, no explanation of this periodicity has been furnished.

Poison Dangers

Dr. Edwin Smith, lecturer on forensic medicine and toxicology at St. Thomas' Hospital, and coroner for northeast London, addressed a meeting of nurses and others at the hospital and nursing conference on poisons. He said that had he been addressing a meeting of physicians he should have taken the opportunity of reminding them that, just as a hospital should have its poison cupboard, so the physician should have a properly equipped bag for use in case of poisoning. There was much laxity in the matter. Very few physicians, he declared, were prepared for adequate attendance on cases of poisoning. They simply relied on finding what they wanted when they got to the patient and, while usually prompt in administering an emetic, they also showed a surprising want of care or knowledge in following up the treatment with the proper antidote. That was a somewhat serious criticism, but it was based on accurate knowledge of the conditions of medical practice both in London and elsewhere. Nurses, he said, had been led into error, through mistaking the symbols used in physicians' prescriptions, and in a badly written prescription the symbol for a drachm might easily be mistaken for that of an ounce. The present poison regulations were drastic in one sense but very unsatisfactory in another. No one could get from a pharmacist a hundredth of a grain of arsenic except by a procedure hedged round with safeguards against accident and crime. But such poisons as spirits of salt and salts of lemon could be sold at an oilshop, even to a child, without hindrance. Further, the bottle or package in such cases was required to be labeled "Poisonous," a word which surely tended to mislead by suggesting something of lesser virulence hardly calling for the more definite name of "Poison."

The Uses of Radium

The effects of the uses of radium on malignant and nonmalignant diseases in nine research centers during 1924 is summarized in a pamphlet just issued by the medical research council. Five of these centers are in hospitals in London, and the other four are in hospitals at Birmingham, Cardiff, Aberdeen and Dublin. The experiments have been carried out with a stock of radium salt which had been collected for military purposes during the war. Further quantities of radium salt had been provided by the British Empire Cancer Campaign, while the same organization is defraying the expenses of supplying radon from the center at the Middlesex Hospital.

With regard to cancer in the breast, it is stated that radium has a definite therapeutic value; local recurrences, treated by the method of surgical insertion, are often held in check, and may sometimes disappear after the use of comparatively large doses of radium. For cancer of the uterus, a palliative radium treatment has proved of great value. Hemorrhage ceases in nearly all of the cases, the local growth disappears in a large percentage, the patients feel better and put on weight, and in many instances life is prolonged. The histologic evidence proves that where the growth is localized, the malignant cells have in certain cases been completely destroyed. The value of radium therapy in malignant growths of the mouth, nasopharynx, larynx and esophagus is stated to be intimately bound up with the technic adopted. The irradiation of tumors in these sites by numerous, though weak, radium sources, applied for a long time, is a hopeful development, but results on a larger number of cases are needed before any definite conclusions on this technic can be reached. Another conclusion drawn is that radium therapy is effective in a large porportion of rodent ulcers. There is, however, a tendency for recurrence. In cases in which there has been a recurrence of activity of the cells at the surface of the growth, this points to unusual resistance of such cells to irradiation.

Roentgen-Ray Martyr Honored

Major J. Hall-Edwards, the Birmingham radiologist, has been elected honorary life member of the British Medical Association. Dr. Hall-Edwards has had his left hand and forearm and the four fingers of his right hand amputated as the result of dermatitis. Recently he has suffered from recurrent heart attacks, but he continues to take an active interest in public life as a member of the Birmingham city council.

The Journal of Neurology and Psychopathology

The British Medical Association has decided to publish the *Journal of Neurology and Psychopathology*, which has existed since 1920 and was started to take the place of the former *Review of Neurology and Psychiatry*, a valuable periodical that ran from 1903 to 1918. The aim of this journal has been to supply abstracts and reviews covering the whole field of neurology and psychopathology, for which the need is felt by workers in those subjects. The editor is Dr. S. A. Kinnier Wilson. The *Journal* is a quarterly and the annual subscription is $7.50, for which orders should be sent to the financial secretary, British Medical Association, Tavistock Square, London, W. C. 1.

GENEVA

(From Our Regular Correspondent)

May 5, 1926.

Hydrocyanic Acid in Shoe Cleaning Preparations

By a circular of March 23, 1926, the federal department of public health states that recently preparations containing hydrocyanic acid have been on sale for cleaning silver and brocade slippers. The sale of these dangerous products is prohibited by article 38 of the Swiss federal law relating to foodstuffs and various ordinary preparations for household use, and the public is therefore warned against their use.

Tuberculosis Control in Denmark

J. Ostenfeld and G. E. Permin have presented a detailed report on the control of tuberculosis in Denmark to the Swiss federal department of public health. The state pays from three fourths to five sixths of the cost of treatment. The question of payment never excludes tuberculosis cases from any of the establishments mentioned by law. The public charities maintain the family during the treatment of its wage earner. Patients are clad and transported at the expense of the municipality. The expenses of state recognized antituberculosis dispensaries are met, one third by the state, one third by the municipality and one third by private initiative. Besides economic measures, the law covers a number of prophylactic and sanitary measures, such as reporting of cases of pulmonary or laryngeal tuberculosis and reporting of all deaths from tuberculosis. Furthermore, disinfection, isolation or hospital treatment may be ordered when necessary. In order to protect children, a wetnurse cannot be accepted unless she has a medical certificate specifying that she is free from tuberculosis; subjects with infective tuberculosis cannot be employed in any institution where children are cared for. Private persons cannot take children to board unless provided with a medical certificate showing that persons in the family are not affected with contagious tuberculosis. Children with infective tuberculosis are barred from public schools. The department of public instruction provides instruction for diseased children. Every teacher must be free from infective pulmonary or laryngeal tuberculosis. If a public employee contracts infective tuberculosis after being appointed, his case is investigated, and if he is discharged he receives an annuity equivalent to two thirds of his salary. The law excludes subjects with tuberculosis from bake-shops and confectioners. Throughout Denmark there are stations for diagnosis where examination of the sputum is gratuitous.

Epitaph Prejudicial to Medical Profession

The civil court of Montpellier recently handed down a decision as follows: An epitaph injurious to physicians or the medical profession cannot be tolerated. The test case was that of a man who lost his wife and accused Dr. P. Delmas, professor of obstetrics at Montpellier, of having caused her death. The husband had inscribed on a black stone in gold letters "Victim of the Professors," and this was placed over the vault in a little chapel. Learning this, Professor Delmas and the medical syndicate of Hérault conjointly sued the husband. The court ordered the husband to remove the words "Victim of Professors" within one month, and if he did not comply within this time to pay twenty francs ($0.65) daily until the removal of the words. The court also ordered the husband to pay one franc to Delmas and 500 francs ($16) to the syndicate, as well as costs of the trial.

Trial of a Quack

In La Chaux-de Fonds (Switzerland) a Russian woman pretended that she possessed special power at the finger tips, similar to radium, and could cure certain diseases. Some witnesses stated that they had been improved after the healer had placed her finger tips on them. The healer did not exact a fee, but accepted presents. She prescribed no remedy, her mere personal fluid being enough to work a cure. She was found guilty of the illegal practice of medicine.

Case of Lipodystrophy

A case of progressive lipodystrophy in a boy, aged 10 years, has been in the university clinic of Geneva. As pointed out by Professor Roch, this case is interesting in several ways. In the first place the onset was only one year ago. The affection evolved very rapidly because when the patient was first seen the picture was nearly complete. On the other hand the picture was not perfect. Although the fat atrophy of the upper half of the body was practically complete, the fat hypertrophy of the lower part of the body was incomplete, the amount of fat being hardly greater than normal. The patient presented a distinct polymicro-adynia. There is no clear pathogenesis but it is possible that the involvement of the lymphatics had played a part in the development of the progressive lipodystrophy. The patient had quiescent tuberculosis, which had attacked the lymphatics and probably also the endocrine glands, whose part in disturbances of growth and metabolism is now recognized. Of late, it has been shown that the lymph nodes and lymphocytes throw a lipolytic ferment into the circulation—a lipase—the function of which in fat transformations is not fully elucidated. For this reason Professor Roch stressed the coincidence of a disturbance in the distribution of the subcutaneous fat and the general involvement of the lymphatic system.

RIO DE JANEIRO

(From Our Regular Correspondent)

April 15, 1926.

Treatment of Lupus

Dr. Alvaro Alvim states that the alleged new cure for lupus reported by Dr. Auregan to the French Dermatological Society is far from new. This treatment consists of a deep scraping followed by applications of potassium permanganate. While the method cures, says Alvim, he does not use it as it is too painful and antiplastic. Alvim reports that he has cured all his patients, using first ultraviolet rays or Finsen light, followed by embrocations with a freshly prepared potassium permanganate solution. Sometimes the tubercles on the surface are burned with the actual cautery. Radiotherapy destroys all traces of the disease.

Spider Venom

In the second volume of *Memorias do Instituto Butantan*, Drs. Vital Brazil and J. Vellard have a long article on the poison of spiders. They studied five different species: *Ctenus ferus*, Perty; *Ctenus nigriventer*, Keys; *Trechona venosa*, Latr.; *Nephila cruentata*, Fabr., and *Lycosa raptoria*, Walck. With direct bites, the results are variable, according to the condition of the spider, the temperature and other factors. To obviate this uncertainty, several solutions of the poison were prepared. These yielded results somewhat less active than those secured with bites. With a dry poison treated with saline solution, the results came closest to those of natural poison. The venoms of *Ctenus ferus* and *Ctenus nigriventer* are very active and affect exclusively the nervous system. On the contrary, that of *Nephila cruentata* is rather weak, and its action is purely local. The venom of *Lycosa raptoria* acts also only locally but is very potent. This spider is incriminated in the necrosing arachnidism cases reported at São Paulo.

Certain neurotoxic spider poisons possess an activity comparable to that of the strongest snake venoms; on the other hand, others cause only a more or less extensive local necrosis. Practically all those studied (more than twenty species) failed to exhibit any lytic action on blood cells, as well as any proteolytic or coagulating effect.

In any case of bites by poisonous spiders, specific serum therapy should be used. It is possible to prepare a very active serum against spider venom. The serum of a sheep that had received for two weeks daily injections of *Ctenus ferus* neutralized an appreciable quantity of this poison. A very active serum against the poison of *Lycosa raptoria* was obtained by a similar method. These serums are strictly specific and do not protect against other species. Likewise, snake or scorpion antiserums are useless against spider venom. It proved difficult to study the neutralizing action of the blood serum of spiders on their own serum. A 0.1 cc. dose of serum proved ineffectual; a 0.5 cc. dose was strongly toxic. The symptoms caused by the blood serum of several species of spiders were identical, but each poison acted differently.

Spider poisons are stable at low temperatures. They begin disintegrating at 65 C., but total destruction takes place only at 100 C. They are also resistant to the various chemical agents used for attenuation. The most active substances are potassium permanganate (1 per cent solution) and tenth normal solution of sodium and ammonia (25 per cent). Sodium thiosulphate (50 per cent), chromic acid and ammonia (1 per cent) proved rather ineffective.

Artificial Pneumothorax

Dr. Ary Miranda has discussed the immediate results of pneumothorax in tuberculosis of the lung. This method was used in 117 cases treated at the tuberculosis division of the public health department. In twenty cases, the process proved impracticable, because of pleural involvement; in twelve it had to be abandoned, as the collapse proved inadequate; in seventeen, lesions appeared in the opposite lung; eighteen patients refused to continue the treatment, and one died after the pneumothorax failed to stop the downward course. In the remaining forty-nine, the method modified favorably the symptoms, and even permitted the patients to return to their former occupation. It is interesting to observe that the air hunger so prevalent among tuberculous patients is a reflex phenomenon and not the direct result of the decreased breathing surface.

Late Localized Tetanus

Dr. Americano do Brazil has reported a case of late local tetanus with pleurothotonus treated in the Army Central Hospital. The patient, after a bullet wound in the left hip, received the usual antitetanic injection. Two months and ten days afterward, he developed tetanus symptoms localized in the wounded part. The patient finally recovered after receiving 657 cc. of serum. Trismus, nuchal rigidity and abdominal muscle reactions were transitory, the predominant symptom consisting in contractions in the left lower extremity. According to Lumière and Courtois-Suffit, there has not been so far a single case of local tetanus with traces of pleurothotonus.

Cholecystography

Dr. Manuel de Abreu presented to the Society of Medicine and Surgery the first report prepared here on cholecystography. His records showed graphically that after an injection of tetrabromphenolphthalein in normal subjects, the gallbladder casts as clear a shadow as the stomach after an injection of bismuth. Dr. de Abreu also showed the roentgenograms as well as the surgical specimen in a case of calculus impacted in the cystic duct. Graham-Cole's test had been negative; i. e., the gallbladder was invisible.

ITALY

(From Our Regular Correspondent)

April 15, 1926.

A Series of Lectures on Neoplasms

Under the auspices of the Istituto sieroterapico of Milan, a series of lectures on neoplasms will be held in that city, from April 12 to May 14. At the same time, Professor Rondoni will deliver a course of lectures on endocrine pathology. There will also be a theoretical and practical course in immunology and serodiagnosis, occupying two weeks in May.

Italian Colonial Medicine

In an open letter, directed to the prime minister, Professor Sangiorgi of the University of Parma emphasizes the need of a genuine Italian colonial medicine, which today does not exist. No one has been assigned the official task of studying the medical geography of the various regions that make up our African possessions, nor the numerous types of diseases, of both man and animals, peculiar to the particular climates. Professor Sangiorgi proposes, therefore, that Italy should establish in its colonies special biologic institutes, provided with personnel and equipment, for the study of problems of colonial medicine, preferably of the type of the Pasteur institutes such as France has created in its colonies. As points of departure for the organization of such institutes might possibly be taken the present vaccination institutes existing in Eritrea (at Asmara) and in Italian Somaliland (at Merka). Others should be established at Tripoli, Derna and Rhodes (for the islands of the Aegean Sea).

Congress of the Italian Society of Neurology

The Società italiana di neurologia held its annual meeting at Turin, April 7-9, under the chairmanship of Senator Leonardo Bianchi. The congress comprised six sessions, during which numerous communications on the physiopathology of the nervous system were presented. It is the custom of the Society of Neurology not to have presented at its congresses official papers on subjects selected in advance. During the congress, special honors were shown to Prof. Eugenio Tanzi, occupant of the chair of mental and nervous diseases of the University of Florence, on the occasion of his becoming a septuagenarian. The day following, Professor Morpurgo presented to the conventionists Prof. Camillo Golgi, who had been counselor of the Società di neurologia since its foundation. Catania was chosen as the meeting place for the next congress.

League for the Promotion of Dental Hygiene

Founded in Turin, last October, with the object of promoting the care and prevention of dental caries, particularly in children, the Lega italiana per la propaganda d'igiena odontoiatrica scolastica has grown rapidly. In the schools, it has introduced a dental record card for the use of physicians entrusted with the medical examinations and to aid in the compilation of eugenic records. The league has induced dealers in school supplies to print maxims of dental hygiene on tablets and composition books, and has had made and distributed a type of toothbrush specially adapted for children. The league has appointed certain Italian stomatologists as its representatives in various provinces. It plans also to commission Drs. Rivano and Marangoni to deliver at Turin a series of lectures on the anatomy, physiology and pathology of the dental apparatus, with especial reference to children.

The Death of Giuseppe Gradenigo

The death of Prof. Giuseppe Gradenigo, director of the otorhinolaryngologic clinic at the University of Naples, has been announced. Professor Gradenigo was born in Venice in 1859. He carried out important researches on the embryology of the ear. He is the author of approximately 400 articles, treatises and books. His researches on familial deafness, experimental phonetics, telephonic acoumetry and otic acoumetry are likewise valuable. In 1889, he founded, in collaboration with Professor De Rossi of Rome, the monthly review *Archivio italiano di otologia, rinologia e laringologia.* During the war, he held the rank of lieutenant colonel, devoting much of his time to the study of methods of selecting air pilots. He was the recipient of many honors at home and abroad.

BERLIN

(From Our Regular Correspondent)

April 17, 1926.

The Congress of Internal Medicine

The annual session of the Deutsche Gesellschaft für innere Medizin was held in Wiesbaden, April 12-15, under the chairmanship of Professor Pässler of Dresden. The three main topics presented during the first three days of the session dealt with (1) the therapy of neurosyphilis; (2) the blood as a reflector of somatic processes, and (3) the pathology and therapy of asthma. The remaining papers or addresses (around 110) either treated subtopics of the main themes or were concerned with diseases of the nervous system, of the heart and kidneys, or of metabolism.

TREATMENT OF NEUROSYPHILIS

The papers on therapy of neurosyphilis were presented by Professor Spielmeyer of Munich and Professor Wagner-Jauregg of Vienna. Spielmeyer discussed, more particularly, theoretical researches on treatment of neurosyphilis. In neurosyphilis, tabes and general paralysis occupy a distinct position. They are not mere syndromes within the limits of neurosyphilis. The possibility of arrest of tabes can be demonstrated anatomically. In general paralysis, the clinical term "stationary" is not usually justified anatomically, since the process continues to develop, although possibly imperceptibly. There have been perhaps a few cases in which a cure with defect could be demonstrated. The histologic picture in the cases of general paralysis in which malaria inoculation has proved successful resembles the findings in the cases of paralysis that have become spontaneously stationary. The principle involved in this method has not been cleared up as yet by the anatomic findings. A special causative agent might, according to laboratory experiments, constitute an obstacle to specific therapy (Ehrlich's trypanosome studies, etc.). Various strains of spirochetes occur. There is also evidence of an early but not of a late neurotropy. The theory that antisyphilitic treatment tends to produce neurosyphilis needs to be more definitely established before conclusions can be drawn. The assumption that, in therapeutics, the spinal fluid-blood barrier constitutes the chief obstacle appears doubtful. Other factors may come into play; for instance, peculiarities of the organism, or the breakdown of defense forces. Wassermann's proposals that the process be imitated that presumably takes place in the therapy of secondary syphilis have not proved successful. Laboratory experiments have given no insight into the question of the breakdown of the defense forces of the organism. They have not revealed failure of important blood functions, nor loss of capacity for phagocytosis. Attempts to prove weakness of the defense forces from the histologic picture also have failed.

Professor Wagner-Jauregg discussed the modern treatment of neurosyphilis. All treatments act for the most part by stimulating the defense forces of the organism against syphilis. The tuberculin-mercury procedure was instituted in 1900. Numerous remissions of the disease were thereby effected, but in the majority of the cases the improvement was not permanent. The same is true of other treatments, such as the use of vaccines and protein bodies. These experiences led to the treatment of general paralysis by inoculation with malaria (1917). Malaria inoculation should always be combined with other treatment. Recurrences have been noted, but these can doubtless be controlled by more intensive treatment. Retrogression of the disease symptoms and improvement in serologic reactions do not at first run parallel. *But, later on, if the remissions become permanent,* there is gradual improvement in those reactions as well.

The malaria treatment may be used prophylactically in persons who are threatened with general paralysis. African recurrent fever, as introduced by Plaut and Steiner in the treatment of general paralysis, acts in a manner similar to malaria. However, malaria inoculation produces more remissions than recurrent fever. Treatment by malaria inoculation is not dangerous for the environment, provided gamete-free malaria strains are employed. Malaria caused by the bite of the mosquito is not to be recommended, as it is not as susceptible to quinine as is inoculation malaria. The restorative process that follows malaria inoculation or recurrent fever is worthy of intensive study. In tabes as well, especially in the preataxic stages, the treatment by malaria and recurrent fever is effective. In remotely latent cases with persistently positive spinal fluid findings, the treatment as introduced by Kyrle is particularly indicated. Possibly, too, Kyrle's malaria treatment of secondary syphilis has justification.

PRAGUE

(From Our Regular Correspondent)

May 1, 1926.

Institute for Histology and Embryology

The new building of the institute for histology and embryology was opened, April 16, at the Czech Medical Faculty of Prague. In the same building the institute for pharmacology and pharmacognosy will be located. The increasing number of both native and foreign medical students has made it imperative to increase teaching facilities. The construction of the institute was started in June, 1923. The institute for embryology and histology is divided into two parts: one for teaching and one for research. The students' part of the building contains the J. E. Purkinje amphitheater, with 331 seats. Each seat has a small electric lamp which can be used when the amphitheater has been darkened for projections. The Prenant lecture room for eighty students, a seminar room for thirty-four students, an examining room and two laboratories for microscopy, each containing seventy-five seats, complete the teaching part of the institute. The large museum was dedicated to O. Hertwig. The scientific part of the institute is centered about the library. On both sides of the library are laboratories and offices. There are laboratories for photomicrography, drawing, photography, construction of models, microchemistry, neurology and tissue culture. There are also a couveuse, an aquarium and a terrarium. In the basement are a large dissecting room, an operating room for experimental animals, a room for the conservation of preparations, a refrigerating machine and a mechanical workshop. Provision is made for ten workers who are not the members of the staff but who wish to work out clinical problems by laboratory methods. In 1928 the International Congress of Anatomists will be held in the institute.

Anniversary of Ivan Honl

Prof. Dr. Ivan Honl of the Czech Medical Faculty in Prague celebrated his sixtieth birthday, April 23. Having started his work in a single small room in the institute of Professor Hlava, he gradually developed his laboratories into a modern bacteriologic institute. Many papers bear his name. He was the first to demonstrate the effects of *Bacillus pyocyaneus* on suppurative processes. During the war he organized the epidemiologic service in his institute, and not only carried out the diagnostic work but also produced serums and vaccines.

Death of Friedl Pick

Prof. Dr. Friedl Pick of the German Medical Faculty in Prague died in Prague, April 7. He published many papers in the field of internal medicine. Pericarditic pseudocirrhosis of the liver is known as Pick's disease. On account of inherited wealth he was able to give his entire endeavors to the public. Many poor were among his patients. His papers, such as "Jesenius," are of interest to students not only of medical but also of general history.

Clinic for Study of Diseases of Old Age

At the Czech Medical Faculty of Prague, a clinic for study of diseases of old age was opened recently under the direction of Prof. A. Eiselt. The clinic is the outgrowth of a feeling that there is a special pathology of old age as there is of childhood. According to Professor Eiselt's introductory lecture, two groups of diseases of old age must be studied at the clinic: diseases that are specific for old age and ordinary diseases that present a different clinical picture when occurring in old age. The clinic is of special interest to the Czechoslovak republic because of old age and invalidity insurance, which will be put into force, July 1. The clinic has an outpatient department and eighty-three beds equally divided between the sexes. The staff comprises two medical assistants besides the chief of clinic.

Directory

The Central Society of the Czechoslovak Physicians, which comprises all physicians of Czechoslovak nationality in the republic, has issued its directory. The society has obtained addresses of 4,539 Czechoslovak physicians, of whom 3,790, or 83.49 per cent, are regular members. There are about 8,000 physicians in the Czechoslovak republic, of whom 7,500 are practicing medicine. With a population of 13,500,000, this makes an average of one physician to 1,800 of population.

Tuberculosis Mortality

The figures for tuberculosis mortality in the Czechoslovak republic for the years 1923 and 1924 have been published. For all forms of tuberculosis the mortality for the country as a whole for 1923 was 190.2 per hundred thousand; for 1924, 190.05. The slight decrease is due chiefly to the statistics of pulmonary tuberculosis, while the mortality from other forms of tuberculosis remained almost constant. The decrease in tuberculosis mortality is limited to the western half of the Czechoslovak republic. The figures indicate that the western part of the republic, which is industrially developed, has passed its tuberculinization period and is building up a racial immunity coupled with an intensive campaign against tuberculosis. In the eastern part of the republic, where, until recently, the population lived under purely rural conditions, tuberculosis is spreading.

Marriages

Daniel W. Wheeler, Duluth, Minn., to Miss Della Hinshaw of River Forest, Ill., in April.

Hugh Cotter Boyle, Philadelphia, to Miss Evelyn A. Mallen of Conshohocken, April 10.

James Marsh M. Alesbury to Miss Mary C. Sullivan, both of Philadelphia, April 24.

Victor F. Cullen, Sabillasville, Md., to Miss Ethel Bell of Texas, May 19.

Deaths

Byron Clary Darling ⊕ New York; Medical School of Harvard University, Boston, 1903; member of the American Roentgen Ray Society and the Radiological Society of North America; assistant demonstrator of anatomy, Cornell University Medical College, 1903; formerly instructor in clinical orthopedic surgery, Columbia University College of Physicians and Surgeons; on the staffs of the Knickerbocker Hospital, 1904-1906, Lying-In Hospital, 1906, Bellevue Hospital, 1908-1910, St. Vincent's Hospital, 1909-1919, Ruptured and Crippled Hospital, 1912-1919, and St. Mark's Hospital, 1914-1925; aged 50; died, May 9, of pneumonia.

Edward Hickling Bradford ⊕ Boston; Medical School of Harvard University, Boston, 1873; member of the American Surgical Association; formerly professor of orthopedic surgery and dean at his alma mater; on the staffs of the Children's Hospital, 1878-1909, and the Boston City Hospital, 1880-1894, author of "Treatise on Orthopedic Surgery"; aged 77; died suddenly, May 7, of heart disease.

Alexander N. Stark ⊕ Colonel, U. S. Army, retired, Los Angeles; University of Virginia Department of Medicine, Charlottesville, 1892; was appointed assistant surgeon in the army in 1893 and retired with the rank of colonel, August 26, 1925, on account of physical disability; awarded the Distinguished Service Medal for his work during the World War; aged 56; died, May 8, at Hollywood, of angina pectoris.

Edward Hiram Abbott ⊕ Elgin, Ill.; Rush Medical College, Chicago, 1895; Spanish-American War veteran; for many years member and at one time president of the board of education; on the staffs of the Sherman and St. Joseph's hospitals; aged 59; died, April 12, following a long illness.

Lafayette Wallace Case, Colorado Springs, Colo.; Rush Medical College, Chicago, 1870; formerly lecturer in chemistry and dermatology at his alma mater; at one time on the staff of St. Joseph's Hospital, Chicago; aged 80; died, March 26, at Pasadena, Calif., of heart disease.

Alexander Douglas Wallace Kay, Detroit; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1911; member of the Michigan State Medical Society; served during the World War; aged 38; died, March 13, at a local hospital, of pleurisy.

Jirah H. Kellogg, Sterling, Colo.; University of Colorado School of Medicine, Denver, 1906; member of the Colorado State Medical Society; aged 54; died, April 17, of an overdose of a scopolamine-morphine mixture, self-administered for relief of pain.

Thomas F. McGlasson, Lewistown, Mo.; College of Physicians and Surgeons, Chicago, 1886; member of the Missouri State Medical Association; past president of the Lewis County Medical Society; aged 64; died, May 3, at the State Hospital, no. 1, Fulton.

William Graham Painter, Big Stone Gap, Va.; Medical College of Virginia, Richmond, 1901; member of the Medical Society of Virginia; aged 50; died, April 22, at the George Ben Johnston Memorial Hospital, Abingdon, of coronary thrombosis.

Charles E. Jenkins, Lynn, Mass.; Dartmouth Medical School, Hanover, N. H.; 1881; member of the Massachusetts Medical Society; one of the founders and formerly on the staff of the Union Hospital; aged 70; died, April 23, of heart disease.

Marion Herbert McGuire ⊕ New Orleans; Medical Department of the Tulane University of Louisiana, New Orleans, 1898; formerly instructor of anatomy at his alma mater; Spanish-American War veteran; aged 52; died, May 6.

Joseph Martin, Philadelphia; Jefferson Medical College of Philadelphia, 1878; member of the Medical Society of the State of Pennsylvania; for eight years member of the city council; aged 77; died, May 1, of heart disease.

Wilbur Gleason Ruble ⊕ Morristown, Tenn.; Kentucky School of Medicine, Louisville, 1904; past president of the Hamblen County Medical Society; served during the World War; aged 52; died, April 27, of heart disease.

Hyman M. Folkes ⊕ Biloxi, Miss.; Medical Department of the Tulane University of Louisiana, New Orleans, 1893; past president of the Harrison-Stone County Medical Society; aged 55; died, May 1, of cerebral hemorrhage.

Tarley William Jones, Fayette, Ala.; Vanderbilt University Medical Department, Nashville, Tenn., 1900; member of the Medical Association of the State of Alabama; aged 51; died, April 16, of pneumonia, following influenza.

Samuel Gibson Mugrage, Denver; Gross Medical College, Denver, 1895; formerly lecturer on clinical ophthalmology and otology and demonstrator of anatomy at his alma mater; aged 73; died, April 13, of heart disease.

Horace Clay Martindale ⊕ Pendleton, Ind.; Physio-Medical College of Indiana, Indianapolis, 1907; served during the World War; aged 45; died, May 4, at the Methodist Hospital, Indianapolis, of chronic nephritis.

James Glenn Donald, Pine Apple, Ala.; University of Alabama School of Medicine, Tuscaloosa, 1901; member of the Medical Association of the State of Alabama; aged 46; died, April 21, of angina pectoris.

Edward Skillman Hawke ⊕ Trenton, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1895; on the staff of the Mercer Hospital; aged 60; died, March 29, of acute dilatation of the heart.

Wilbur Fisk Shirkey ⊕ Charleston, W. Va.; College of Physicians and Surgeons, Baltimore, 1894; past president of the Kanawha County Medical Society; aged 67; died, March 29, of heart disease.

Harry Gilmore Carter ⊕ Burkeville, Va.; Medical College of Virginia, Richmond, 1914; superintendent of the Piedmont Sanatorium for eight years; aged 39; died, April 10, of pulmonary tuberculosis.

Harry S. Tuthill, Penn Yan, N. Y.; Jefferson Medical College of Philadelphia, 1881; aged 70; died, April 8, at the Soldiers' and Sailors' Memorial Hospital, following an operation for gastric ulcer.

George Henry Aiken, Fresno, Calif.; Medical Department of Columbia College, New York; 1869; Civil War veteran; for twelve years city health officer of Fresno; aged 81; died, April 12, of senility.

Israel Cleaver ⊕ Reading, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1863; Civil War veteran; aged 83; died, April 10, at the Reading Hospital, of arteriosclerosis.

John Wallace Hazen ⊕ Meadville, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1920; secretary, Crawford County Medical Society; aged 30; died, March 6, of pneumonia.

John A. Barnes, Tampa, Fla.; University of Georgia Medical Department, Augusta, 1891; member of the Florida Medical Association; for several years city physician; aged 58; died, March 1.

Early E. Scott, Fort Smith, Ark.; University of Louisville (Ky.) School of Medicine, 1908; member of the Arkansas Medical Society; served during the World War; aged 45; died, April 20.

William I. Sumner, Randleman, N. C.; University of Tennessee College of Medicine, Memphis, 1893; member of the Medical Society of the State of North Carolina; aged 56; died, May 6.

Robert Wilson Caldwell, Jackson, Ohio; Pulte Medical College, Cincinnati, 1895; member of the Ohio State Medical Association; aged 58; died suddenly, May 4, of cerebral hemorrhage.

Joseph W. Gregory, Cisco, Texas; Fort Worth School of Medicine, 1899; member of the State Medical Association of Texas; health officer; aged 57; died, April 12, of cerebral hemorrhage.

Albert Charles Zaiser, Santa Ana, Calif.; St. Louis College of Physicians and Surgeons, 1897; member of the California Medical Association; aged 52; died, April 11, of cerebral hemorrhage.

Joseph H. Delaney, Bozeman, Mont.; University of Virginia Department of Medicine, Charlottesville, 1897; aged 51; died, March 11, at San Antonio, Texas, of tuberculous meningitis.

Dargan Strother Pope, Columbia, S. C.; Jefferson Medical College of Philadelphia, 1875; member of the South Carolina Medical Association; formerly a druggist; aged 75; died, April 26

Ralph Howard Pulsifer, Belgrade, Maine; Hahnemann Medical College and Hospital of Philadelphia, 1890; Boston University School of Medicine, 1890; aged 60; died, March 5.

Elizabeth Hinckley Delavan, Troy, N. Y.; Cleveland Medical College, 1897; Boston University School of Medicine, 1898; aged 80; died, March 4, at Round Lake, of heart disease.

William Lafayette Henderson, Woodstock, Tenn.; Memphis Hospital Medical College, 1894; aged 53; died, March 2, at the Baptist Memorial Hospital, Memphis, of uremia.

Ernest William Baum ⊕ Phoenix, Ariz.; Rush Medical College, Chicago, 1895; aged 53; died, April 20, at a hospital in Hollywood, Calif., of uremia and chronic nephritis.

George Henry Denike, Bristol, Ind.; Hahnemann Medical College and Hospital, Chicago, 1905; aged 62; died, April 8, at the Epworth Hospital, South Bend, of heart disease.

James H. Hall, Pittsburgh; Leonard Medical School, Raleigh, N. C., 1906; member of the Medical Society of the State of Pennsylvania; aged 45; died, January 11.

Lorenzo D. Allard ⊕ Portsmouth, Ohio; Medical College of Ohio, Cincinnati, 1879; on the staff of the Portsmouth General Hospital; aged 70; died, April 8, of myocarditis.

Albert Martin Card, Head Tide, Maine; Medical School of Maine, Portland, 1875; member of the Maine Medical Association; aged 75; died, March 9, of pneumonia.

Frank Pierce Lyons, Flora, Ind.; Medical College of Indiana, Indianapolis, 1881; formerly county coroner; aged 73; died, April 26, of pernicious anemia.

James T. Hoskins, Washington, D. C.; Washington Homeopathic Medical College, 1894; formerly a druggist; aged 72; died, March 15, following a long illness.

William Edward Anderson ⊕ Farmville, Va.; Medical College of Virginia, Richmond, 1888; aged 59; died, May 10, at the Stuart Circle Hospital, Richmond.

Abraham L. Holloway, *Hutchinson, Kan.; Bennett College* of Eclectic Medicine and Surgery, Chicago, 1878; aged 68; died, April 9, of cerebral hemorrhage.

Frank David Paul, Rock Island, Ill.; State University of Iowa College of Homeopathic Medicine, Iowa City, 1886; aged 64; died, May 3, of pneumonia.

John William Craddock, Chicago; University of Illinois College of Medicine, Chicago, 1920; aged 31; died, March 9, following an operation for goiter.

Benjamin Thomas Fisher, Martinsville, Ind; Medical College of Indiana, Indianapolis, 1879; aged 79; died, May 1, at Spencer, of arteriosclerosis.

Samuel Harper Smith, McKeesport, Pa.; College of Physicians and Surgeons, Baltimore, 1881; aged 70; died, March 6, of carcinoma of the bladder.

Lisle W. Neiswender ⊕ Columbus, Ohio; Ohio Medical University, Columbus, 1906; aged 46; died, April 12, of heart disease, following influenza.

Harry Williamson ⊕ Marion, Ind.; Medical College of Indiana, Indianapolis, 1892; aged 61; died, April 12, at Miami Beach, Fla, of myocarditis.

William Franklin Taylor, Laurel, Md.; University of Maryland School of Medicine, Baltimore, 1884; aged 71; died, April 26, of heart disease.

James P. Driscoll, Spokane, Wash.; Northwestern University Medical School, Chicago, 1906; aged 44; died, April 6, of cerebral hemorrhage.

Samuel S. Hall, Jackson, Calif.; California Eclectic Medical College, Los Angeles, 1891; aged 59; died, March 5, of cardiovascular disease.

Carl Strueh ⊕ Chicago; University of Zurich, Switzerland, 1886; aged 64; died, May 6, at his home in McHenry, of cerebral hemorrhage.

Charles L. Gangloff, Pittsburgh; Cleveland University of Medicine and Surgery, 1892; aged 57; died, April 12, of pneumonia.

Ashton T. Ford, Sylvester, Ga.; Atlanta Medical College, 1889; aged 60; was killed, May 2, by an assailant.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

CRESOG NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following report

W. A. PUCKNER, Secretary.

Cresog (Cresog Laboratories Co, Detroit) is stated to be "composed of a pure glycerine base with the addition of two per cent of 'Pomcresol' (manufactured by Searle and Co., Chicago), plus Bicarbonate of sodium, 2%." The label and advertising for Cresog contain such meaningless statements regarding the composition as: "Derivative of Cresol, also Glycerine and Others" No information is given in regard to the composition of "Pomcresol."

Though the Cresog label admits that the preparation has a phenol coefficient of but 0.1, the preparation is claimed to have "strong germicidal effect." It is recommended on the label for "cuts, wounds, infections, sprains, inflamed joints and chapped hands," and it is stated that Cresog, used in the absence of a physician, "eliminates the possibility of infection."

The Council finds Cresog unacceptable for New and Nonofficial Remedies because its composition is indefinite, its name nondescriptive of its composition, the claims unwarranted, and the recommendations for its use such as may lead the public to place false dependence on it in serious conditions.

ROBES' ANTI-RHEUMATIC INJECTIONS NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

The Council has authorized publication of the following statement.

W. A PUCKNER, Secretary.

Robes' Anti-Rheumatic Injections is marketed by Robes' Intravenous Products, Inc. In some of the advertising the synonym "Guaiamercol" is applied to the preparation. In Cuba this preparation is evidently called "Patogenol Gardier"

Robes' Anti-Rheumatic Injections is stated to contain mercuric chloride 0.9 mg, "guaiacum solids" 0.3 mg. and sodium chloride 0.0066 Gm. per cc. of 8 per cent alcohol.

The action of the "guaiacum solids" is not stated in the advertising or in the information submitted to the Council. The pharmacologic action is stated to be as follows:

> "When this solution is introduced into the system of an individual suffering from rheumatism, there is produced immediately the coagulation of certain heterologic albuminae, determining the formation of an *antigen* These coagulated albuminae, in the presence of the great mass in the blood stream, are dissolved and, at the same time, the injected solution continues to coagulate new groups of albuminae which, in turn, are dissolved in the blood stream. Thus, we have a real reversible reaction characteristic of the colloids, or a false catalysis, and this continues up to elimination through the natural emunctories The organism responds to the attack by producing the corresponding antibodies, which possess specific action against the bacteria and its toxins"
>
> "The affinity of the antibody for the causative organism is represented by reciprocal reactions, producing in that way the bacteriotropic and not the organotropic element This reaction is influenced by opsonic elements of the lipoid group, which favor the chemotactic between the antibodies and these bacteria"
>
> "In all cases where 'Robes' Anti Rheumatic Injections' are administered to a patient really suffering with rheumatism, general and local phenomena appear due to physico chemical reactions which determine the behavior of the heterogeneous albumins liberated"

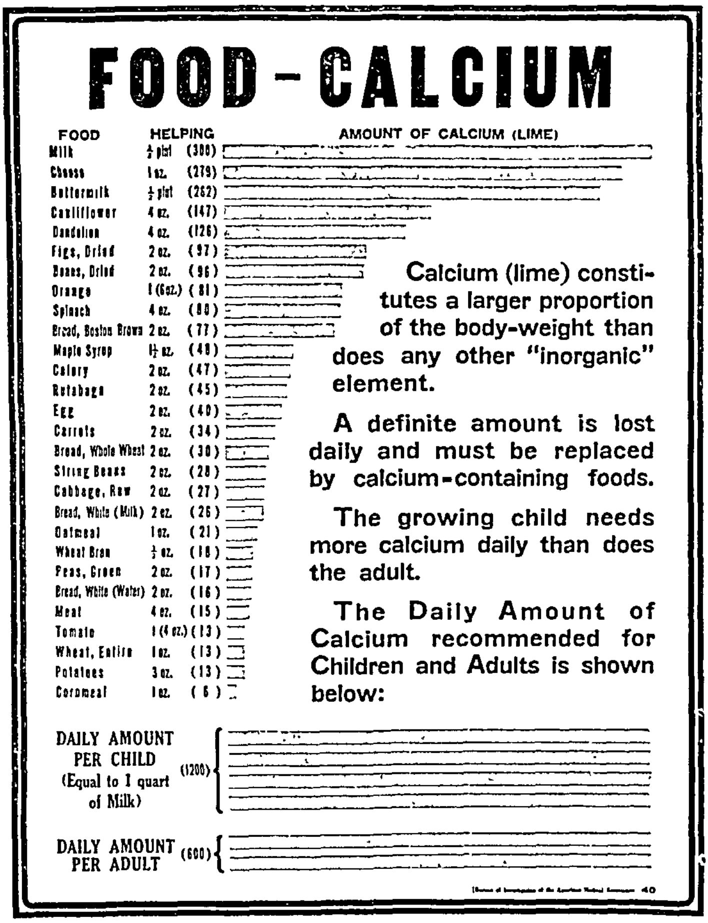
The therapeutic indications for Robes' Anti-Rheumatic Injections are stated to be:

> "In cases of Rheumatism, in any of its manifold manifestations: Sciatica, Lumbago, torticollis, facial neuralgia and iritis of rheumatic origin, visceral rheumatism, acute, subacute or chronic muscular or articular rheumatism, arthritis deformans, gonorrheal arthritis; post-measles or post scarlatinal arthritis. There are no counter indications. Its use is always beneficial due to its bactericidal action"

The circular which accompanies the trade package contains the additional information:

> "Sometimes in 15 to 20% of the cases, we notice that the patient does not respond to the medication; this is due to the fact that the 'chemical affinities' between the germs and the antibodies created by the introduction of our injections in the system, remain dormant. In such cases it is necessary to use the 'Lipoids' that we prepare from greasy vegetable acids, submitted to a special process that increases their vitality, and as we camphorate them, they act also as a tonic upon the heart, affected in most every rheumatic person."

The Council finds Robes' Anti-Rheumatic Injections unacceptable for New and Nonofficial Remedies because (1) its composition is indefinite in that no data are given as to the nature of "guaiacum solids"—which alone makes the preparation different from a simple solution of mercuric chloride in an alcoholic saline solution; (2) no tests are submitted whereby the "guaiacum solids" can be detected, or determined quantitatively; (3) the therapeutic claims are unwarranted, in that no evidence is submitted to show that "guaiacum solids" makes the preparation more effective than a simple solution of mercuric chloride or that the latter has any value in "rheumatism"; (4) the amount of the potent ingredient is not declared on the label; (5) the name is objectionable in that it does not indicate clearly the most potent ingredient and is therapeutically suggestive; (6) the trade package circular which accompanies the trade package advertises an unacceptable article and (7) because it is an unscientific preparation the use of which is detrimental to rational therapy.



Calcium (lime) constitutes a larger proportion of the body-weight than does any other "inorganic" element.

A definite amount is lost daily and must be replaced by calcium-containing foods.

The growing child needs more calcium daily than does the adult.

The Daily Amount of Calcium recommended for Children and Adults is shown below:

A miniature reproduction of a new poster just issued. This is one of forty educational posters prepared and issued by the Bureau of Investigation of the American Medical Association. The original posters are 22 inches by 28 inches, and sell for twenty cents each.

Correspondence

CARBON MONOXIDE FROM ILLUMINATING GAS

To the Editor:—The case of carbon monoxide poisoning reported by Dr. Stevens of New York in The Journal, April 17, impels me to call attention to my article published in The Journal in 1905 and entitled "The Dangers of the Domestic Use of Illuminating Gas and the Means of Avoiding Them." I served on the committee appointed by the College of Physicians, Philadelphia, to protest against large scale introduction of water-gas as an illuminant in Philadelphia. Newspapers and many citizens jeered at the protest, but the subsequent fatality record is evidence of the danger of gas highly charged with carbon monoxide. The "slot-meter" in which a coin automatically starts the flow of gas has added new danger. Frequently these meters are broken open by thieves and the gas is allowed to escape.

Henry Leffmann, M.D., Philadelphia.

"WHO'S WHO IN AMERICAN MEDICINE"

To the Editor:—About a year ago I was circularized re "Who's Who in American Medicine." Without much thought I filled in the blank as one would the questionnaire of the A. M. A. Directory, and later canceled the order. I now realize the folly of such a publication coming from a commercial publishing company. The publishers insisted on mailing a copy, which I refused at the post-office. Since then I have had two bills and several letters insisting that I must take the book on "moral grounds."

There is no need of such a publication that cannot be better filled by our own directory. I ask, How is any one to judge who is who anyway? What special talent is to decide?

F. J. Walter, M.D., La Mesa, Calif.

CUTIS VERTICIS GYRATA

To the Editor:—In The Journal, April 10, p. 1126, Dr. Raymond J. Sisson, in discussing cutis verticis gyrata, states that "only a few cases have been reported, and none were associated with acromegaly." In the article on acromegaly in "Endocrinology and Metabolism" (edited by Barker and Hoskins) **1**:831, two cases of cutis verticis gyrata in acromegaly are quoted, one reported by Sabat, the other by C. Adrian. I have seen one case in an acromegalic woman, but this case has not been reported.

Peter Bassoe, M.D., Chicago.

"CRYSTALLINE PROTEINS IN URINE"

To the Editor:—In The Journal, May 1, Welker, Thomas and Hektoen (p. 1333) state that "crystalline proteins have been isolated from the urine up to the present time in only eight cases." Dr. D. Wright Wilson (*J. Biol. Chem.* **56**:203 [May] 1923) described a spontaneously crystallizable protein of a Bence-Jones nature. Other references of interest in this connection are: *J. Biol. Chem.* **18**:277, 1914, and *J. Physiol.* **42**:199, 1911.

Withrow Morse, Philadelphia.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed Every letter must contain the writer's name and address, but these will be omitted, on request.

RAT VIRUS

To the Editor.—There is being sold in considerable amounts a substance called Azoa, which is used for killing rats It is said to be harmless except for killing rats. Can you give me any information about it? I am particularly interested because I know of instances in which it has been used around camps in the woods and on water courses which might drain down into a fairly thickly populated community which obtain their water from the river.

FRITZ B TALBOT, M D, Boston

ANSWER—Azoa, like other preparations of this type, contains a rat virus which is a bacterium belonging to the paratyphoid group of bacilli. Organisms of this group have been associated with outbreaks of gastro-enteritis or food poisoning. The group contains a number of species of bacteria which vary considerably in their pathogenicity toward man and animals. Manufacturers of rat viruses maintain that they are harmless for human beings. Epidemiologic evidence involving these viruses in outbreaks of paratyphoid infection has certainly not been frequent. Wade and McDaniel (THE JOURNAL, Nov. 1, 1924, p 1416), in describing a milk borne outbreak with simultaneous but apparently unrelated increased incidence of the disease in Minneapolis, state that they found no evidence that would involve rat viruses. On the other hand, Spray (THE JOURNAL, Jan 9, 1926, p. 109) has produced evidence to connect the use of a rat virus with a food poisoning outbreak. Contamination of a raw water supply or of food by organisms of the paratyphoid group, whatever their origin, would appear to involve some risk.

HAZARDS OF LAMP SHADE INDUSTRY—PREVENTION OF LEAD POISONING

To the Editor.—1. What special hazards are to be encountered in the manufacturing of lamp shades? The coloring of these shades is done by spraying various paints over prepared parchment It appears that amyl alcohol is the usual solvent for the staining materials The question has arisen as to the injurious effects of such volatile matter as might be contained in these preparations 2 Are there any drugs or chemicals that might be added to drinking water to render it an efficient prophylactic against daily exposure to lead poisoning? In the literature, a mild acid drink, such as lemonade, seems to be generally favored In the particular plant where this lead hazard is to be found, the men work only six hours a day It is a question whether it would not be more advisable to favor the daily excretion of lead absorbed during that period rather than favor the storage of such in the bones, such as is usually done on a high calcium diet. Please omit name.

M D., California

ANSWER—1. On all sides lamp shades may be seen, made of art glass, fabrics, pottery ware, reed and paper. Our correspondent refers only to the hazards incurred in the making of shades from paper. The processes involved are continually changing; no uniformity exists in this industry. The cheaper imitation parchment papers are given a coating of tinted shellac The solvent is commonly denatured ethyl alcohol. At present there is a vogue for shades studded with glass particles or glass beads. In this process the fixative is made of resins and wax dissolved in denatured alcohol. The pigments are likewise dissolved or suspended in this mixture of resins and alcohol. In still other factories lacquers are employed in which benzene, benzine, amyl alcohol, amyl acetate or tetrachlormethane may be used. It is from this group that intoxications may be expected Benzene in particular should not be employed in such spray methods without adequate means for eliminating fumes; i. e, through the use of booths with suction.

If the workers are affected by amyl alcohol (fusel oil), some or all of the following manifestations may arise: vomiting, dizziness, great weakness, slowing of heart rate, shortness of breath, severe headache or low blood pressure. If benzene is responsible for the intoxications, some or all of these manifestations may arise: slight inflammation of the conjunctiva and respiratory tract, pain in the abdomen, frequent urination, headache or muscle tremors; occasionally a very susceptible person will quickly become unconscious and die without any preliminary symptoms or signs; in chronic cases, hemorrhage into the skin and from the gums, lungs, stomach or genitalia is characteristic, together with anemia, leukopenia and loss of blood platelets. A more complete description of the toxicity of benzene, with references, was given in THE JOURNAL, Oct. 3, 1925, p 1081 Most of the solvents now in common use as thinners and in lacquers and varnishes will produce severe dermatitis, usually on the hands and forearms.

2 The addition of any substance to the drinking water supply of workers exposed to lead is not at this time regarded as a practical step in the prevention of lead poisoning Previously, weak sulphuric acid lemonade or lemonade containing magnesium sulphate was recommended in the belief that lead sulphate would be formed and that this salt would be insoluble in the gastro-intestinal fluids While lead sulphate is less soluble, it is to some extent taken up by the intestinal tract. Much lead poisoning is produced by lead entering the body by way of the respiratory tract Obviously, any treatment of the water supply would not protect against this mode of entry.

High calcium or other alkali intake favors the fixation of lead in the body tissues, with a resulting freedom from clinical lead poisoning It is not known, however, whether or not this is merely putting off the eventuality of lead poisoning when later the hydrogen ion concentration is altered through the omission of alkalis It is regarded as a safe procedure to encourage lead workers to utilize a high calcium diet, to take alkalis at frequent intervals, and then about once a year to eliminate the stored lead through the administration of such chemicals as ammonium sodium chloride, iodide or ammonium acetate Best of all is the elimination of the hazard itself through the control of lead dusts and fumes, and the education of workers to avoid the entry of lead into the mouth from the hands, cigarets or food

IODINE FOR GOITER—FELLOWSHIP AND MEMBERSHIP

To the Editor—1 Please set me right on when and when not to give iodine in goiter Recently a friend had iodine administered, and there was considerable argument pro and contra In hypothyroidism, thyroid extract is administered, yet I see that Crile and others give thyroid extract or iodine preparatory to removal of the gland. It is the iodine in the thyroid extract that produces the results, if I understand it right Then why give thyroid extract or iodine in both conditions? What is the consensus regarding the roentgen ray in goiter? One man says yes another says no, so it puts one where he does not know how to advise his goiter patients From the journals and in conversation with different men it is just as perplexing I have given iodine in hyperthyroidism and got fairly good results The foregoing may sound more or less puerile but I just cannot see where the thyroid extract comes in in hyperthyroidism 2 What is the difference between a member of and a Fellow of the American Medical Association?

HERMAN CASTILE, M D, Foreman, Ark.

ANSWER—1 Many of the rest of us are at times as puzzled as is our correspondent concerning the proper procedure in certain cases of hyperthyroidism, but not all of us are as frank in admitting our difficulties. The reasonable inference to be drawn from the conflicting evidence is that there is still much to be learned about the thyroid and its functions, and that the question of treatment is not nearly so simple as some would have us think We are advised to give iodine in exophthalmic goiter and warned against giving it in toxic goiter While there is no great difficulty in placing some cases in one and some cases in the other of these two groups, there are many cases in which this classification is difficult, and for many of us impossible on clinical grounds. Whether iodine should be used in these doubtful cases may in some instances be determined only by cautious trial. In recent years, attention has been repeatedly called to the appearance of symptoms of hyperthyroidism in persons who have been given even small doses of iodine. In hyperthyroidism the signs and symptoms, such as tachycardia, nervousness, tremor, loss of weight or increased metabolic rate, appear in widely differing degrees in different cases, and the question may well be raised as to the possible multiplicity of thyroid hormones, overfunction of one or more of which may account for the variability of the clinical picture. There is no consensus as to the value of the roentgen ray in hyperthyroidism. Some patients improve remarkably following a series of roentgen-ray treatments. In others, the results are disappointing Ligation and roentgen ray together are sometimes effective Partial and subtotal thyroidectomy are required in others In estimating the value of any one of these procedures, we are often inclined to forget that overacting thyroids pass through cycles of overaction and relative quiescence, independently of treatment.

2 All members, in good standing, of state medical associations whose names are reported to the American Medical Association for enrolment are members of the American Medical Association. All members of the American Medical

Association in good standing are eligible for Fellowship. To qualify as a Fellow, a member is required to make formal application and to subscribe to The Journal. Fellowship dues and subscription to The Journal are included in the one annual payment of $5. None but Fellows can serve as officers or delegates, and none but Fellows and invited guests can participate in the work of the sections of the Scientific Assembly.

TREATMENT OF INFECTION OF THE ANTRUM

To the Editor:—Will you please outline for me the recognized modern treatment of an infection of the antrum of Highmore, whether or not to be irrigated through a tooth socket opening; if so, how often and what solution used? Whether or not a window operation through the nose is the thing? Whether vaccines would be of value, whether physiotherapy (quartz) is curative, or, if of value, how much can be depended on it alone? Any further suggestions as to treatment will be appreciated.

Roland R. Cross, M.D., Dahlgren, Ill.

Answer.—Infections of the antrum of Highmore, or maxillary sinus, are usually treated by irrigation or, if necessary, by direct drainage. There are three routes by which the antrum may ordinarily be irrigated. First, by way of the natural opening in the middle meatus. This merely requires cocainization of the middle meatus and then the passing of a cannula into the natural opening or into one of the accessory openings. Second, there is the route most often used by way of the inferior meatus. After thorough cocainization, a trocar is pushed through the inner wall of the antrum, which is the outer wall of the nose, and the sinus thus entered. The third route is by way of the alveolar process, usually through a socket of the upper second bicuspid or first or second molar. No good tooth should be sacrificed in order to enter the antrum this way. In the second place, if a tooth has for some reason or other been removed, it is possible by means of a hand or electrically driven drill to open into the antrum. However, we believe the last route the least desirable, as it is almost impossible to prevent reinfection of the antrum from the entrance of saliva or food particles through this opening into the cavity.

In acute cases, a warm physiologic sodium chloride or mildly alkaline solution, such as 2 or 3 per cent sodium bicarbonate, is usually best. For the subacute or more chronic cases, solutions such as 1: 2,000 or 1:3,000 copper sulphate may be employed. If the irrigations do not suffice in the acute or in the chronic cases, operative procedures are sometimes necessary and the various routes previously mentioned may be used. We may enlarge the natural opening in the middle meatus or, preferably in order to get better drainage, do a window resection in the inferior meatus, making as large an opening as possible. In some cases a more radical operation, such as the Luc-Caldwell or Denker, is required in very chronic or obstinate instances. Vaccines are as a rule of value only when thorough drainage has first been established. Physiotherapeutic measures, such as the quartz lamp treatment or diathermy, have not given very definite curative results, so far as we know. An important measure for prophylaxis or cure is the removal of any upper teeth, especially the second bicuspid or first or second molars, which show infection of the apexes. If not removed, these teeth very easily produce infection of the maxillary sinus. In any case, we believe that conservative measures, such as irrigation or minor operations, should be employed before any radical procedure is instituted.

TREATMENT OF WOUNDS

To the Editor:—In minor industrial accidents, is it now considered good practice to wash blood off injured surface with an antiseptic solution, or to dress the injury without doing this? Please use initials.

R. W. C., M.D., New Jersey.

Answer.—If there is any considerable amount of blood, it should be washed off. If the blood has dried and is crusted, a liquid composed of solution of hydrogen dioxide and water, equal parts, quickly removes this. The small wound should then be painted with tincture of iodine or a 2 per cent solution of mercurochrome-220 soluble, and a dry dressing applied.

TREATMENT OF PINWORMS

To the Editor:—I was interested to see Dr. Hollingsworth's inquiry regarding the treatment of pinworms (The Journal, April 24, p. 1309). Long residence in the tropics, where all varieties of intestinal parasites are encountered, has led me to rely on massive doses of bismuth carbonate. For an adult, we give from 1 to 2 drachms (4 to 8 Gm.) night and morning for three days.

H. P. Nottage, M.D., Albany, Ore.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.

American Board of Otolaryngology, Canada: Montreal, June 1. Sec., Dr. H. W. Loeb, 1402 South Grand Boulevard, St. Louis, Mo.

Arizona: Phoenix, July 6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

California: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, Regular Board and Homeo. Board, June 15-17. Pres., Dr. H. W. Briggs, Wilmington.

Florida: St. Petersburg, June 14-15. Sec., Dr. H. M. Rowlett, Box 603, Tampa.

Georgia: Atlanta, June 9-11; Augusta, June 1-3. Sec., Dr. C. T. Nolan, Marietta, Ga.

Indiana: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.

Iowa: Iowa City, June 8-10. Commissioner of Health, Dr. Don M. Griswold, State Capitol, Des Moines.

Kansas: Kansas City, June 15. Sec., Dr. Albert S. Ross, Sabetha.

Kentucky: Louisville, June 24-26. Sec., Dr. A. T. McCormack, 532 West Main Street, Louisville.

Maine: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: Baltimore, Reg. Bd., June 15-18. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 15-16. Sec., Dr. Joseph S. Garrison, Old Orchard Rd., Ten Hills, Baltimore.

Massachusetts: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

Michigan: Ann Arbor, June 8-10. Detroit, June 14-16. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

Minnesota: Minneapolis, June 15. Sec., Dr. A. E. Comstock, 734 Lowry Bldg., St. Paul.

Mississippi: Jackson, June 24-25. Sec., Dr. F. J. Underwood, Jackson.

Missouri: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.

National Board of Medical Examiners: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.

Nebraska: Omaha, June 8-10. Director, Bur. of Exam. Bds., Mrs. Clark Perkins, Lincoln.

New Jersey: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, Room 1101, Trenton Trust Bldg., Trenton.

New York: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, Education Bldg., Albany.

North Carolina: Raleigh, June 21-25. Sec., Dr. K. P. B. Bonner, Morehead City.

North Dakota: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.

Ohio: Columbus, June 8-11. Sec., Dr. H. M. Platter, Columbus.

Oklahoma: Oklahoma City, June 15-16. Sec., Dr. J. M. Byrum, Shawnee.

Oregon: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburg, July 13-17. Director Prof. Education, C. D. Koch, Harrisburg.

Rhode Island: Providence, July 1-2. Sec., Dr. B. U. Richards, 315 State House, Providence.

South Carolina: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

South Dakota: Custer, July 20. Director, Med. Lic., Dr. H. R. Kenaston, Bonesteel.

Tennessee: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. Alfred B. De Loach, 434 Madison Ave., Memphis.

Texas: Austin, June 15-17. Sec., Dr. T. J. Crowe, 918 Mercantile Bank Bldg., Dallas.

Utah: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

Vermont: Burlington, June 23. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 16-19. Sec., Dr. J. M. Preston, 720 Shenandoah Life Bldg., Roanoke.

West Virginia: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, Basic Science Board, June 12-13. Sec., Dr. M. F. Guyer, Madison. Regular Board, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

Wyoming: Cheyenne, June 7-9. Sec., Dr. G. M. Anderson, Cheyenne.

Michigan Reciprocity Report

Dr. Guy L. Connor, secretary of the Michigan Board of Registration in Medicine, reports that 20 candidates were licensed by reciprocity from January to April, 1926. The following colleges were represented:

LICENSED BY RECIPROCITY

College	Year Grad.	Reciprocity with
Atlanta School [illegible] Georgia,	(1911)	Montana
Northwestern [illegible]	(1924)	Illinois
[illegible]	[illegible]	Indiana
[illegible]	[illegible]	Kansas
[illegible]	[illegible]	Maryland
[illegible]	[illegible]	Mass.
[illegible] College of Medicine and Surgery	(1924)	California
St. Joseph Hospital Medical College	(1882)	Missouri
St. Louis University School of Medicine	(1924)	Illinois
Cincinnati College of Medicine and Surgery	(1900)	Kentucky

Cleveland Homeopathic Medical College	(1898)	Ohio
Hahnemann Med. College and Hosp. of Philadelphia	(1899)	Penna.
University of Tennessee College of Medicine	(1912)	Tennessee
University College of Medicine, Richmond	(1898)	W. Virginia
Dalhousie University Faculty of Medicine	(1924)	Ohio
McGill Univeristy Faculty of [illegible]	[illegible]	Ohio
University of Toronto Faculty [illegible]	[illegible]	Ohio
National University of Ireland.	[illegible]	Montana

* Verification of graduation in process.

Book Notices

The Surgery of Pulmonary Tuberculosis. By John Alexander, B.S., M.A., M.D., Assistant Professor of Surgery in the Medical School, University of Michigan. With introductions by Hugh Cabot, M.D., C.M.G., LL.D., Professor of Surgery, University of Michigan, and Edward R. Baldwin, M.A., M.D., Director of the Trudeau Foundation and Trudeau School of Tuberculosis. Cloth. Price, $4.50. Pp. 356, with 65 illustrations. Philadelphia: Lea & Febiger, 1925.

This is the most complete monograph that has yet appeared in the English language on the subject. It is an ideal contribution to the literature, as it is scholarly, orderly and complete, and condenses into a small volume the present knowledge of the subject. The author points out that few physicians and surgeons are yet aware that surgery is now curing or improving approximately two thirds of those selected cases of far advanced pulmonary tuberculosis that other methods of treatment have failed to benefit. The material covered includes a perspective of the surgery of pulmonary tuberculosis; evolution of surgical therapy, pathologic anatomy and physiology of pulmonary compression; indications and contraindications for surgical intervention; artificial pneumothorax compared with thoracoplasty; choice of operation; partial operations; preoperative management; choice and technic of anesthesia; the Wilms-Sauerbruch extrapleural paravertebral thoracoplasty; the Bauer subscapular extrapleural paravertebral thoracoplasty; paravertebral thoracoplasty of the upper seven ribs compared with radical phrenicotomy; extrapleural parasternal thoracoplasty; partial artificial pneumothorax combined with partial paravertebral thoracoplasty; phrenicotomy; extrapleural pneumolysis; Jacobæus' closed intrapleural pneumolysis; open intrapleural pneumolysis; drainage of the tuberculous lung cavity; spontaneous pneumothorax; tuberculous effusion and empyema; postoperative course and management, including complications; changes in configuration of the chest following thoracoplasty, and the results of paravertebral thoracoplasty. There is a bibliography which is practically complete for the years 1918-1924, inclusive, with the titles of a number of articles appearing early in 1925 and several references of historical importance dated prior to 1918.

Alexander prefers thoracoplasty to artificial pneumothorax. In discussing preoperative preparation, he approves the use of digitalis to strengthen the heart. In general, he prefers the Wilms-Sauerbruch extrapleural paravertebral thoracoplasty to the other methods of thoracoplasty, although in certain cases other methods of thoracoplasty may be employed, or extrapleural pneumolysis, or, in rare cases, the drainage of cavities. In considering Jacobæus' closed intrapleural pneumolysis Alexander concludes, as in the chapter dealing with artificial pneumothorax compared with thoracoplasty, that unless artificial pneumothorax can be undertaken and completed under favorable conditions, thoracoplasty offers the patient a better prognosis. If a satisfactory pneumothorax cannot be obtained by a relatively simple operation of short duration, both cauterization and pneumothorax should be abandoned and thoracoplasty performed. Sauerbruch considers ether the anesthetic of choice, and his experience on many hundreds of patients with active pulmonary tuberculosis has convinced him that it has no unfavorable action on the lungs, unless by abolishing the cough reflex it allows aspiration of secretions. This opinion as to the relative harmlessness of ether in the presence of pulmonary tuberculosis is not in accord, however, with the general belief and practice. Many thoracic surgeons in this country prefer to combine procaine-epinephrine local anesthesia with nitrous oxide-oxygen anesthesia. Alexander believes that local anesthesia in conjunction with ethylene gas anesthesia is probably the best anesthetic available for the surgery of pulmonary tuberculosis, except in patients with more than 30 cc. of sputum a day and those to whom a general anesthetic per se would be dangerous. In the latter cases, local anesthesia alone should be used.

In considering the Wilms-Sauerbruch operation, as in the various chapters dealing with other operative procedures, the author begins with a definition, and then discusses the operation in the minutest detail, including the position of the patient on the table, the position of the surgeons, the incision, the use of wound protectors, and the order of rib resections. In explaining the technic for subperiosteal rib resection, he describes and illustrates his ingenious rib-edge periosteum stripper, which will strip the rib edges rapidly, cleanly and without danger of wounding the pleura. Other surgeons have spoken highly of this instrument and agree with the author that it renders easy the separation of the periosteum from the edges of the ribs beneath the tenacious attachment of the intercostal muscles, a step that is often tedious and must be done slowly in order not to injure the pleura. Alexander regularly resects the most prominent rib first. This is usually the ninth; then follow the eighth, seventh, sixth, fifth, tenth and eleventh. This concludes the first stage if a two-stage operation is performed, which is the rule. The second stage should be done within six weeks of the first as a rule, because in from six to eight weeks after the first stage there is regeneration of rib from the remaining periosteum, often with bony bridging between the ribs, and with more or less rigid fixation of the chest wall. At the second stage, the upper four ribs are resected in this order: fourth, third, second, first. Most surgeons prefer an interval of from two to three weeks. The length of the various ribs to be resected is discussed in detail. Supplementary operations, which at times are necessary, are briefly summarized. The important points of the Wilms-Sauerbruch operation include the subperiosteal resection of sufficient lengths of the eleventh to the first rib, inclusive, from below upward, in two stages; removal of ribs beginning from the tips of the transverse processes of the vertebrae; careful avoidance of wounding the pleura; speed in operating; an interval of from two to three, but not more than six, weeks between stages. If the tuberculous lesions, especially cavities, are insufficiently compressed and rested six months after the operation, one or more of the following supplementary operations may be indicated: phrenicotomy, secondary paravertebral resections, extrapleural parasternal thoracoplasty, extrapleural pneumolysis with "filling," or cavity drainage. Alexander believes that doubt may justly be expressed as to the wisdom of resecting the lower ribs at the first stage of the operation because of the danger consequent on the impairment of expectoration, and that phrenicotomy as a substitute for primary resection of the lower ribs will probably reduce the operative mortality and postoperative lung complications.

The author states that surgery has favorably influenced 61.2 per cent of the patients reported as operated on during the past seven years and has actually cured 36.8 per cent of them. All were in far advanced stages of the disease, most had cavity formation, and many had bilateral active lesions. They were referred for operation because the prognosis was considered hopeless without surgical intervention. The extent to which these results can be bettered depends on the widespread use of the improvements that are being made in operative technic and in preoperative and postoperative management, and particularly in the proper selection of patients for surgery. The author has contributed this volume in the hope that in the future operation frequently will be performed while the patients are in good general condition and while the lesions are almost entirely limited to one lung.

Handbuch der Hals-Nasen-Ohren-Heilkunde. Mit Einschluss der Grenzgebiete. Herausgegeben von A. Denker und O. Kahler. Zweiter Band. Zweiter Teil. Die Krankheiten der Luftwege und der Mundhöhle. Paper. Price, 84 marks. Pp. 1068, with 394 illustrations. Berlin: Julius Springer, 1926.

This is the second volume of this encyclopedic work on the ear, nose and throat, and covers the subject of the respiratory tract and the oral cavity. The volume opens with a continuation of the pathology and therapy of the nose from the previous volume. Under the heading of therapy, many general measures of prophylactic and active nature are given. Many details are presented under the heading of anesthesia, both general and local. A number of the new preparations for local anesthesia are mentioned. The chapters on operative technic include tracheotomy. Under the next heading there is a complete discussion of malformations of the nose, mouth, pharynx and larynx. The chapter on diseases of the nasal septum is well illustrated, and tells about the various methods that have been used in operations for the correction of deflections. Under the next heading there is a discussion of acute and inflammatory conditions involving the nose and nasal accessory sinuses, with the various cranial complications that arise from these conditions. This volume is a good companion to the preceding one, it is complete, has a detailed bibliography, presents numerous illustrations, and contains a world of facts.

Public Health Law A Manual of Law for Sanitarians. By James A Tobey, M S, LL B, Lecturer on Public Health Law at the Massachusetts Institute of Technology, Yale School of Medicine, and Columbia University Cloth Price, $4 50 Pp 304 Baltimore The Williams & Wilkins Company, 1926

Within the compass of 239 pages, exclusive of four appendixes and a table of cases, the author outlines the organization and powers of health departments, state and local, and devotes one chapter each to the control of communicable diseases, to the abatement of nuisances, to venereal diseases, to the legal aspects of mental hygiene, to the legal liability for damages arising out of public health activities, and to the drafting of health legislation In early chapters the author discusses the basis and importance of public health law. The value of the book is chiefly in its general information and in its references to sources from which further information can be obtained. In compiling and arranging the references, the author has rendered a pioneer service. In addition to the numerous citations to adjudicated cases, a selected bibliography is included as one of four appendixes, the references being divided into three groups: (1) those pertaining to public health in general; (2) those relating to law without particular reference to public health, and (3) those referring to public health law. The book, according to the preface, while designed especially for health workers, "may likewise prove of value to jurists, lawyers, government officials, physicians, sociologists, students, and others who may be called on to delve into the administration of sanitary science." It has in it little of peculiar value to the physician.

Die Innervation der Harnblase. Physiologie und Klinik. Von Dr Med Helmut Dennig, Assistent der medizinischen Klinik Heidelberg Privatdozent fur innere Medizin. Paper. Pp. 98, with 13 illustrations. Berlin: Julius Springer, 1926

This is a welcome addition to the subject of the normal and pathologic physiology of the bladder. Assembled here is a critical survey of all the literature on the function and innervation of the vesical musculature, sensibility of the bladder, and the relations of the normal act of micturition to higher centers in the spinal cord and brain. A number of instructive experiments made by the author are reported. The chapters on disturbances (both organic and functional) in the act of urination will be of especial value to the internist, neurologist and urologist. The book can be warmly recommended as the best monograph so far published on the subject.

Bacteriology and Applied Immunology for Nurses By Robert A. Kilduffe, A B, A M, M D, Director, Laboratories, Atlantic City Hospital Leather Price, $2 Pp. 252, with 79 illustrations Milwaukee: Bruce Publishing Company, 1926.

Those who have attempted to teach a course in bacteriology to nurses will appreciate the difficulties involved, particularly that of the very brief time allowed for laboratory work. A specially prepared textbook should be of service for such instruction, and Dr. Kilduffe's little volume is the latest to be made available. The book is attractively printed and fully illustrated, is written in simple language, and will undoubtedly be used. It is not evident why the discussion of practical applications of immunity belongs in the general section of "Bacteriology," while water and milk examination are found under "Applied Immunology"

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Correcting Speech Defects and Foreign Accent. By Grace A. McCullough, Supervisor of Speech Improvement in the New York City Schools, and Agnes V. Birmingham, in charge of Speech Improvement in the New York City Schools. Cloth. Price, 88 cents. Pp 232, with illustrations New York: Charles Scribner's Sons, 1925.

Practical and suggestive textbook of great interest to physicians who may be asked to advise in cases of speech defect.

A Classification of the Tumors of the Glioma Group on a Histogenetic Basis with a Correlated Study of Prognosis. By Percival Bailey and Harvey Cushing From the Surgical Clinic and Laboratory of the Peter Bent Brigham Hospital and the Laboratory of Surgical Research of the Harvard Medical School. Cloth Price, $5 Pp 175, with 108 illustrations Philadelphia. J. B. Lippincott Company, 1926

A monographic record of technical research under good auspices.

Physics and Chemistry for Nurses. By A. R. Bliss, Jr, A M, Phm D, M D, and A H. Olive, A M, Ph C.H., Phm.D. Fourth edition. Cloth Price, $2 50 Pp. 190, with 20 illustrations Philadelphia: J. B. Lippincott Company, 1926

Much more information than a nurse can learn or use, but conforms to the standard curriculum of the National League of Nursing Education

Simplified Infant Feeding: With Eighty Illustrative Cases By Roger H Dennett, B S, M D, Professor of Diseases of Children and Director of the Department in the New York Post Graduate Medical School Third edition Cloth Price, $5 Pp. 415, with 14 illustrations Philadelphia J B Lippincott Company, 1926.

New edition with additional material on acidified milk, calcium caseinate, vitamins, gelatin, and similar new subjects.

The Aspergilli. By Charles Thom and Margaret B Church of the Microbiological Laboratory, Bureau of Chemistry, United States Department of Agriculture By G L Keenan Cloth Price, $5. Pp 272, with illustrations Baltimore: Williams & Wilkins Company, 1926

Complete information concerning molds, with a key to their identification.

Our Minds and Their Bodies By John Laird Regius Professor of Moral Philosophy in the University of Aberdeen. Cloth. Price, $1. Pp 122 New York: Oxford University Press, 1925

Well written lecture giving modern philosophic conceptions of relations of mind to body.

Your Hair and Your Health. By Oscar L. Levin, M.D, Chief of Clinic Cornell University Medical College and Clinic. Cloth Price, $1 50 Pp 163, with 10 illustrations New York: Greenberg, 1926

Guidebook written in popular tone but with some popular fallacies.

The Proceedings of the Charaka Club. Volume VI Boards. Price, $4 Pp 145, with Illustrations New York: Paul B. Hoeber, Inc, 1925

Medical belles-lettres of a charming type, reflecting the esthetic aspects of the art and practice.

Diseases of the New-Born: A Monographic Handbook. By John A. Foote, M D, Professor of Diseases of Children, Georgetown University Medical School Cloth Price, $5. Pp 231, with 85 illustrations. Philadelphia. J. B Lippincott Company, 1926.

Brief practical essays, well illustrated.

The Further Studies on Decrementless Conduction. By Genichi Kato, Professor of Physiology, Medical College, Keio University, Tokyo. Cloth Pp 163, with 88 illustrations Tokyo, 1926

Technical research on energy of nerve impulse.

Mortality Statistics, 1923. Twenty-Fourth Annual Report. Department of Commerce Herbert Hoover, Secretary. Bureau of the Census, W. M Steuart, Director. Cloth Price, $1.50. Pp. 485. Washington: Government Printing Office, 1926

Collected Papers By the Staff of the Henry Ford Hospital. First Series, 1915 1925 Cloth Price, $8 Pp 634, with 193 illustrations. New York: Paul B. Hoeber, Inc, 1926.

Medicolegal

Liability of Private Hospital—Regarding Physicians

(Vaughan v. Memorial Hospital (W. Va.), 130 S. E. R. 481)

The Supreme Court of Appeals of West Virginia, in affirming an order setting aside a verdict rendered for the plaintiff and awarding the defendant a new trial, says that the plaintiff sustained an injury to his right foot, two bones near the first and second joint of the second and third toes being broken. Two days later he was taken to the defendant hospital for treatment. After his discharge the foot became swollen and painful. A roentgenogram disclosed that the bones were not knitted, and they were subsequently removed. The defendant contended that it was not responsible for any default on the part of the physicians, they being independent agents. But a hospital incorporated and conducted for private gain, for the benefit of its stockholders, is liable in damages to its patients for negligence or misconduct of its officers and employees. The purely private character of the defendant was practically admitted. The capital invested is like capital invested in any other corporation conducted for profit. In its contracts it stands on the same basis as any other contractor, and as to employees and third persons, it is subject to the same general rule, respondeat superior (let the master answer). The plaintiff and the defendant were brought into relation with each other through the agency of the employer of the former, and he received the surgical and medical care to which he was entitled under the rules and regulations of the state compensation commissioner, the expense thereof to be paid out of the workmen's compensation fund. The application to the commissioner for payment of the medical, surgical and hospital treatment was rendered in the name of the defendant, and included the item for the operation on the plaintiff's foot by the two physicians before referred to. Moreover, it appeared in evidence that those physicians were the managers of the hospital, and that the roentgen-ray machine used in the hospital for the examination of the plaintiff's injury was the property of the institution. Under these conditions, authorities cited hold that the defendant could not absolve itself from the obligation it owed to the plaintiff patient to furnish him proper treatment, on the claim that the physicians who treated him, at its instance, were independent contractors. In view of this, the trial court erred in submitting the question of whether the medical and surgical treatment was rendered the plaintiff by the physicians on their own account, in an instruction given to the jury at the instance of the defendant.

This court thinks that it may be said to be the generally accepted doctrine that a physician is not required to exercise the highest degree of care or skill and diligence possible, in the treatment of an injury, or disease, unless he has by special contract agreed to do so. In the absence of such special contract, he is only required to exercise such reasonable and ordinary skill and diligence as are ordinarily possessed and exercised by the average of the members of the profession in good standing, in similar localities and in the same general line of practice, regard being had to the state of medical science at the time. The general rule just stated does not make the physician in any sense a warrantor or insurer of the success of his treatment, in the absence of a special contract to that effect. And where a physician exercises ordinary skill and diligence, keeping within recognized and approved methods, he is not liable for a mere mistake of judgment. However, he is liable for the result of an error of judgment, when such error is so gross as to be inconsistent with that degree of skill which it is the duty of a physician to possess.

The bones taken from the plaintiff's foot were introduced, but the trial court refused to permit them to go in evidence to the jury for lack of being properly identified. The physician who took them from the foot was not introduced as a witness, nor was his deposition taken. His absence was not accounted for. He unquestionably possessed peculiar knowledge concerning facts vitally essential to the plaintiff's case—the condition of the bones when removed, what caused the condition, and whether there was pus present. The circuit judge doubtless thought this testimony should have been offered. He has a discretion to exercise when a case has not been fully developed. He may set aside the verdict to do justice to all parties. This court cannot say he abused that discretion in this case. If the testimony of the physician who removed the diseased bones was material to the plaintiff's case, and he wished to avoid the effect of the legal presumption that, if the physician had testified, his testimony would have been adverse to him, he should have shown proper diligence to have the physician present as a witness, or have taken his deposition.

Good Indictment of Chiropractor

(Robinson v. State (Ala.), 106 So. R. 53)

The Court of Appeals of Alabama, in affirming a judgment of conviction of defendant Robinson, says that the case was tried on the first two counts of the indictment, to which demurrer was interposed. Those counts charged that the defendant did treat or offer to treat diseases of human beings by a system known as chiropractic for a reward, without first having obtained a certificate of qualification from the state board of medical examiners of the state of Alabama and contrary to law; and further charged that he did treat or offer to treat diseases of human beings by a system known as chiropractic for a reward, such a system being practiced by men known as chiropractors, without first having obtained a certificate of qualification from the state board of medical examiners of the state of Alabama, contrary to law. These counts were demurred to on the ground that they did not sufficiently describe the system by which the defendant was averred to have treated or offered to treat disease; that they failed sufficiently to describe the alleged system known as chiropractic or what was done by chiropractors, or to aver that it was unknown. But the two counts sufficiently charged the offense and were not subject to the demurrers interposed. The Alabama statute is designed to prevent the treatment of diseases of human beings by any system whatever, without the party so engaged having first obtained a certificate of qualification from the state board of medical examiners of Alabama.

"Shell Shock"—Doubt as to Sanity of Defendant

(People v. Gilberg (Calif.), 240 Pac. R. 1000)

The Supreme Court of California, in holding that the trial court had not abused its discretion by omitting to suspend the trial of the defendant for a lewd act, to submit the question whether or not he was then insane, says that he had served in the World War. He received no battlefield wounds, but insisted that he had suffered an injury by falling into a "funk-hole." It appeared that he had spent considerable time as a patient in hospitals under treatment for "shell shock." "Shell shock" is not a distinct type of nervous disorder, but a condition produced on certain organisms by sudden fear or by highly exciting causes. It is a form of neurosis. It is not settled, general insanity, but, according to the testimony of the expert offered by the defense, a functional nervous disease, and not due to organic changes.

The existence of a doubt as to the sanity of a defendant means, of course, any doubt that may be created in the mind of the trial court arising from a consideration of all the facts and circumstances which the situation may disclose, and he may, on his own motion, in the exercise of a sound discretion, submit the question of the defendant's sanity to the determination of a jury. Such a doubt must be supported by facts and circumstances of a substantial character. This right does not arise merely because the defendant asserts insanity, however baseless the assertion may be. To justify the dismissal of the jury or the suspension of a trial, the court must entertain a doubt founded on substantial grounds. In other words, there must exist reason to believe that the claim of insanity made on behalf of the accused is genuine and not simulated as a means of defeating or delaying the law's penalties in cases in which all other means of evading punishment would seem hopeless. The question of whether a doubt sufficient to require the trial court to submit the issue of the sanity of a defendant to a jury during trial is one that must always rest largely within the discretion of the trial court. On principle, the question is not unlike the discretion which the law reposes in a court when it is called on to pass on the competence of witnesses to testify as to the sanity of persons generally.

For insanity to be available as a defense to crime, it must be shown by a preponderance of the evidence that the accused did not know the nature or the quality of the act which he committed, or, if he did know the nature and quality of the act, that he did not know that it was wrong to commit it. The burden of proof is always on the defendant, or on the person who asserts the insanity of another, to establish its existence by a preponderance of evidence. This universal rule is applicable to the issue of mental unsoundness or irresponsibility in every case in which it may possibly arise. The defendant in this case signally failed to meet the burden which the law imposed on him. It was after experts called on his behalf had related in his presence with minute detail the symptoms of "shell shock" and of epilepsy and the effect of each on the nervous organism, as manifested by the external actions of those thus affected, that the defendant, on resuming the witness stand, seemed to pass from a rational state into a state of faulty memory and finally into a state of apparent unconsciousness and collapse which cause a temporary cessation of the trial. Judgment of conviction affirmed.

Medical Bills Under Workmen's Compensation Law

(Sandberg v. Seymour Dress Co., Inc., et al. (N. Y.), 212 N. Y. Supp. 432)

The Supreme Court of New York, appellate division, third department, modifies an award of the state industrial board in favor of the claimant for compensation under the workmen's compensation law of that state, by striking therefrom five sums awarded as compensation to the claimant on account of medical bills of physicians, which amounted to $1,007. The court says that under section 13 of the workmen's compensation law, no claim for medical or surgical treatment is enforceable, except (1) as incidental to, or a part of, an award to an injured employee, and (2) unless, within twenty days following the first treatment, the physician or surgeon furnishing the treatment shall furnish to the employer and the industrial board a report of the injury and treatment on a form prescribed by the industrial board. This applies to every claim by a physician or surgeon for services rendered to an injured employee, payment of which is sought through an award by the industrial board, and whether employed by the employer or employee. This, of course, has no application to the right of a physician or surgeon to recover in an action at law from the employer for services rendered at his request.

Action for Penalty for Practicing Without License

(State Board of Medical Examiners v. Buettel (N. J.), 131 Atl. R. 89)

The Supreme Court of New Jersey, in reversing a judgment of nonsuit which was granted on the ground that the evidence did not sufficiently identify the defendant, says that the action was to recover a penalty prescribed for practicing medicine and surgery without first having obtained and filed a license issued by the state board. There was identity of names and of the person arrested; also proof that Buettel had his office at a certain place, where witnesses testified that they were treated by him, and that a pharmacist had received prescriptions from him. This, the court thinks, was sufficient to justify a finding that the defendant was the person charged and who had treated the witnesses as patients, although, while he had given bond for his appearance, he did not appear at the trial. The proper method of review was that observed, by writ of certiorari.

Nor does the court agree with the contention of the defendant that, having demanded a trial by jury and been refused, the nonsuit should be sustained on the ground that his constitutional right of trial by jury had been infringed. An examination of the authorities establishes beyond question that the right of trial by jury does not extend to actions for penalties for offenses of minor character unknown to the common law. The court thinks it apparent that the legislative right to deal in summary fashion with offenders under legislation for acts not in themselves criminal, enacted under the police power, is not doubted, but, where a jury has been accorded, it has been because the legislature in the particular case has not interdicted the right to a jury trial, but indicated the procedure to be under statutes in which the right is preserved.

The conclusion which the court reaches is that the act under which this proceeding was taken is a valid exercise of the legislative power, and that the legislature clearly intended that the proceeding should be heard in summary manner without a jury. That the steps in the proceeding are not fully set forth, the court thinks is not a ground on which to nullify that purpose. Where in the act they are left open, it will be presumed that the course of procedure in the trial court was intended. This does not render the act unconstitutional. The right of trial by jury is invoked according to the nature of the prohibited act and does not rest alone on the mode in which it is to be tried. It is the substance and not the form that must control in determining the right. The court in the present case sits solely by legislative mandate, and for the purposes of the trial is a statutory tribunal.

Annulment of Marriage for Concealment of Epilepsy

(Busch v. Gruber (N. J.), 131 Atl. R. 101)

The Court of Chancery of New Jersey, in granting petitioner Busch, otherwise called Gruber, a decree annulling her marriage to the defendant, says that the only question in this case was whether or not, if the defendant was afflicted with epilepsy at and before the time of his marriage to the petitioner, knew it, but represented to her that he did not have epilepsy, or concealed from her the fact that he had it, it was such a fraud as would entitle the petitioner to a decree annulling the marriage under the general equity jurisdiction of this court. It has been held that tuberculosis is such a cause; also syphilis. To warrant the court in granting a decree for fraud, the fraud imposed on the petitioner must be of a character affecting an essential of the marriage relation. It seems to this court that epilepsy falls within this doctrine as certainly as do syphilis and tuberculosis. The false representation in the case at bar consisted of the defendant's statement that he was in good health and had never been sick since he was a child and had had no occasion for a physician when, in fact, he was, and for a considerable period of time had been, an epileptic. He suppressed the truth, even if he did not make an affirmative false representation as to the particular fact of epilepsy, and the fraud for which a marriage will be annulled may be either a false suggestion or a suppression of the truth. In other words, this court is clearly of the opinion that, when a man who contracts marriage is and has been suffering from epilepsy but represents to his prospective wife that he is in good health, has never been sick, and has had no occasion for a physician, and within a short time after the marriage has epileptic fits, and his wife then for the first time discovers the disease with which he is afflicted, and straightway leaves him, having had no knowledge of his condition at or before the time of the nuptials, the wife is entitled to have the marrage annulled for fraud, notwithstanding consummation.

Death from Inhaling Carbon Monoxide Accidental Injury

(Cantor v. Elsmere Garage et al. (N. Y.), 212 N. Y. Supp. 327)

The Supreme Court of New York, appellate division, third department, says that when a physician went to a garage at 8 p. m. to get his car he saw and talked with a workman, who appeared perfectly well; nor did the physician notice any smell of gas in the garage. Shortly afterward the workman helped another to move into position, while its engine was running, a car that came in, and then he went to the door to admit another car. Soon after that it was said that he "looked funny." He fell down and made a noise two or three times, when breathing. When a physician was about to be summoned, the one mentioned above returned, at about 9 p. m. He found the man dying. There was a strong odor of gas in the garage; the doors were closed. The physician stated that in his opinion the cause of death was carbon monoxide gas. It thus appeared that the man did not suffer from a gradual and continuous inhalation, but the infliction was quick and of short duration. He suffered an accidental injury, which arose out of the employment. The accident was the inhaling of the carbon monoxide gas, which in itself is odorless, and which had been quickly disseminated in the garage shortly before the man fell to the floor, perhaps while he was helping to push into place the car, the engine of which was running. The presence of the gas was unexpected, and, while the breathing was voluntary, the breathing of a poison gas was not voluntary. If one drinks a glass of water, apparently clear and pure, it is a voluntary act; if, however, unknown to him, this water contains a not distinguishable poison, drinking the poison is not to him voluntary, but an accident. The time when the accident occurred was fixed. It seems that there was present here every element of accident, no niches vacant, and the direct resultant injury was poison and death. The award to the widow and minor children of the workman of compensation under the workmen's compensation law should be affirmed.

Penalty Not Excessive for Illegal Sale of Morphine

(Smith v. State (Okla.), 240 Pac. R. 656)

The Criminal Court of Appeals of Oklahoma, in affirming a judgment of conviction of an illegal sale by defendant Smith of one capsule of morphine for the price of $1, says that the trial court fixed the penalty at a fine of $500 and imprisonment in the state penitentiary for five years. It was urged that the penalty assessed was excessive. But it may have developed in evidence that the defendant was an old offender. The illegal sale of narcotic drugs is a most reprehensible practice, having a debasing influence on both the seller and the buyer and on society in general, and meriting severe punishment. The penalty here assessed was not the maximum prescribed by the statute. Under such circumstances there was no showing made which would warrant this court in modifying the sentence imposed by the trial court. The court will take judicial notice that morphine is a "narcotic drug" within the definition of that term as contained in section 8886 of the Compiled Oklahoma Statutes of 1921. It is not necessary to negative the exceptions or provisos contained in the narcotic drug act in any complaint, information or indictment laid under the act.

Medical Facts and Judicial Precedents—Tuberculosis

(Fraze v. McClelland Co, et al. (Iowa), 205 N. W. R. 737)

The Supreme Court of Iowa, in affirming a judgment which allowed the plaintiff compensation, says that, while he was assisting in moving a large and heavy oak door, the door tipped and squeezed him against the wall. That was the accident. It was momentary, the door being immediately righted. He gave no cry, but immediately afterward sought a bench and lay down feeling quite sick. He later resumed his work, which he continued for three days, when he reported his condition to his foreman, who sent him to the company's physician. The physician found a small red spot on the plaintiff's chest; also, unsatisfactory internal conditions in the chest. The final development was pulmonary tuberculosis. The plaintiff had weighed from 165 to 170 pounds up to the time of his injury, but after it rapidly lost weight until he was reduced to 135 pounds. It was contended that no causal connection between the alleged injury and the tuberculosis had been shown. Two very distinguished medical specialists in tuberculosis testified hypothetically that tuberculosis results from infection and never from traumatism. They, however, did not deny, but impliedly admitted, that tuberculosis might be accelerated and "lighted up" by traumatic causes, though they also testified that the injury to the plaintiff, as described in the hypothetic question, was not adequate to such acceleration or "lighting up." The decisive turn of the case was at this point. The industrial commissioner cited decisions from the courts of last resort of three states, wherein it was found that acceleration of pulmonary tuberculosis had resulted from traumatic causes. This court is not disposed to establish or to contradict medical facts by judicial precedents. Whatever the medical facts may be, as proved in a particular case, they must control regardless of judicial precedent. In the case at bar, this court regards the evidence as close on the question of causal effect, but it thinks also that the evidence of the plaintiff was sufficiently preponderant to sustain the allowing of compensation.

Society Proceedings

COMING MEETINGS

American Laryngological Association, Montreal, Canada, June 3-5. Dr. George M Coates, 1811 Spruce Street, Philadelphia, Secretary.

American Laryngological, Rhinological, and Otological Society, Montreal, Canada, May 31-June 2. Dr. Robert L. Loughran, 145 West 58th Street, New York, Secretary.

American Neurological Association, Atlantic City, June 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., June 14-16. Dr Emory Hill, Professional Building, Richmond, Va., Secretary.

American Orthopsychiatric Association, New York City, June 5-6. Dr. Karl A. Menninger, Mulvane Building, Topeka, Kansas, Secretary.

American Otological Society, Montreal, Canada, May 31-June 3. Dr. Harold Walker, 390 Commonwealth Avenue, Boston, Secretary.

American Pediatric Society, Niagara Falls, Canada, May 31-June 2. Dr. Howard Childs Carpenter, 1805 Spruce Street, Philadelphia, Secretary

American Psychiatric Association, New York City, June 8-11. Dr. Earl D Bond, 4401 Market Street, Philadelphia, Secretary.

American Psychopathological Association, New York City, June 11. Dr. Sanger Brown II, 173 East 70th Street, New York City, Secretary.

American Therapeutic Society, Philadelphia, June 10-12. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C, Secretary.

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23 Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.

Maine Medical Association, Poland Springs, June 10-12. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Springfield, June 8-9. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Library Association, Ann Arbor, Mich., June 8-9. Miss Harriet Wilson, 535 North Dearborn Street, Chicago, Secretary.

Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart Albin Building, Billings, Secretary.

National Association for the Study of Epilepsy, New York City, June 7-8. Dr. A. L. Shaw, 108B The Albiston, Utica, N. Y, Secretary.

New Jersey, Medical Society of, Atlantic City, June 17-19. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.

North Carolina, Medical Society of the State of, Wrightsville Beach, June 15-17. Dr L. B. McBrayer, Southern Pines, Secretary.

Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.

Rhode Island Medical Society, Providence, June 3. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary

Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

MEDICAL SOCIETY OF THE STATE OF NEW YORK

One Hundred and Twentieth Annual Meeting, held at New York March 30-April 1, 1926

(Concluded from page 1652)

Basic Factors in Human Hypersensitiveness

DRS. ROBERT A. COOKE and WILL C. SPAIN, New York: Allergy occurs in a small proportion of the population. In one such patient a 5 grain (0.3 Gm.) tablet of acetylsalicylic acid produced cyanosis, shock and death from asphyxia. Many people have no such symptoms. There exist in the blood plasma of sensitive persons substances that can be transferred to the skin of the normal person and confer a local and temporary hypersensitiveness. The patient to whom the serum has been transferred reacts as the original patient reacted. These substances are relatively stable and are present in a proportion of those suffering from clinical symptoms.

Clinical Result After the Long Continued Use of Insulin

DR. JOHN RALSTON WILLIAMS, Rochester, N. Y.: One group of patients has been studied who have been treated before and since insulin was available. Twenty-eight of these in the preinsulin period lost food tolerance, and after insulin was started twenty-seven of them gained. In the preinsulin group fifteen patients lost weight. After insulin, twenty-four patients gained weight. Before insulin, children rarely showed any growth; since insulin, children have grown rapidly and developed normally. In regard to the fate of patients, before insulin, 66 per cent lived; since insulin treatment, 85 per cent have lived In seventy-one diabetic patients, death occurred from complications in thirty-one cases. Insulin has been found effective in cases of indiscretions of diet. Patients have frequently passed into coma from dietary indiscretions and have been brought out of it by insulin, without apparent harm. One patient has had as many as 4,200 injections about the thighs without harm No increased susceptibility to other diseases has been noted in any insulin cases.

DISCUSSION

Dr Nelson G. Russell, Buffalo: Insulin has lessened the morbidity of diabetes in that it has improved the general condition of the patient, improved his resistance to operative shock, and improved his resistance to other diseases. It has been mentioned that diabetic patients age more rapidly, even with insulin, than do normal persons. In regard to the dosage of insulin, and whether we cannot improve further the general condition of the patients: Most patients have died as a general indirect result of underfeeding. Many persons keep to a lowered diet for some time, and then go on one grand spree, because they are delighted when the tests show lower sugar and that the dosage can be lowered Then they become careless. I do not think in the majority of cases that one can lower the dose Sometimes we have had to lower the dose because we have had reactions—not the regular, insulin reactions, but reactions occurring at irregular times. While we cannot come to final conclusions as to insulin for a long time yet, I think Dr Williams has made it clear by his study of twenty-eight cases that the morbidity of the disease has disappeared Putting his patients back to work was a remarkable result In regard to vascular change, I think there is a definite relation between hypoglycemia and heart muscle change I believe that definite cardiac changes can be demonstrated

The Relation of Vitamins to Disease

Dr E. V. McCollum, Baltimore: We now recognize six vitamins, A, B, C, D, E and, in addition, one which Dr Goldberger has named P P (pellagra preventive). Vitamin A is contained in animal fat. When it is lacking in the diet xerophthalmia, or drying of the whole conjunctival sac, exists. Bishop and Evans have found that there is ovarian disturbance. The female rat has reduced ovulation, and there is also a purulent secretion in the nasal and oral cavities. In regard to vitamin B, we are very uncertain what is the result of vitamin deficiency, but there is a profound disturbance of the peripheral nervous system. Recent evidence seems to point to the fact that there are two or more substances in vitamin B. This vitamin is found in yeast, and Goldberger thinks that yeast will cure pellagra in man and a similar disease called "black tongue" in dogs. Goldberger has made dilute alcohol extract of cornmeal, supplemented by autoclaved yeast which contains a substance indispensable for growth, but which alone does not prove to be an antineuritic substance. The pellagra preventive substance appears to be in the yeast. Vitamin C prevents scurvy, and also widespread hemorrhages in the tissues. This substance is most frequently found in the liver oil of fishes, chiefly of cod. Vitamin D deficiency is found when the diet is deficient in calcium and in phosphorus. In rickets, the blood content of phosphorus is very low; the calcium may or may not be low. If it is below 10 mg. per hundred cubic centimeters of blood, it means rickets with tetanus. Infants born in the late summer have to go through the winter with heavy clothes, deprived of much of the sun's rays, and therefore should have cod liver oil as a routine. Light of certain wave length seems to produce the same physiologic effects as does cod liver oil. The blood cholesterol is affected by ultraviolet radiation, and inert cholesterol is converted into a form physiologically active by ultraviolet rays. The antirachitic value of any substance is due to this form of cholesterol. Vitamin D is contained in an oil found in the wheat germ. Wheat germ oil does not prevent or cure rickets or other vitamin deficiency disease, but it does cure sterility in animals. Deprived of this substance, which is plentiful in cereals and in muscle tissue of animals, the rat cannot carry its young to term. This fact cannot be applied to human beings because of the widespread distribution of this substance. In the animal, lack of it produces emotion, nervousness, abnormal fear, lack of or loss of hair, tendency to destroy the young, and failure to produce milk. Probably the most important vitamin deficiency in this country is the deficiency of calcium in diet. Therefore diet should be considered in respect not only to vitamin content but also to biologic value of the proteins, and in regard to its mineral content. We must also remember the profound importance of other qualities that go to make up a satisfactory diet.

Vitamin Value of Some Common Foodstuffs

Dr. Walter H. Eddy, New York: People are interested in vitamins, proteins and carbohydrates. A housekeeper wants to know when she goes to market just what is contriubted to nutrition by carrots, beef or potatoes. Where are we going to get the vitamins that have been spoken of? We must have some quantitative assay method to measure these foods. The vitamin problem is something that has come along in the last decade. As new vitamins are discovered, all our previous measurements as to the value of a foodstuff are faulty. We have to discard them and start again in the light of new facts. Thus, we have found that bananas hold an antiscorbutic value; from 10 to 15 Gm. of bananas will protect against scurvy, but what else will it do? The diet must be complete in all known factors. We have to study the comparative value of ripe and of unripe bananas. We have found that bananas baked in their skins are even more effective than without Oxidation tends to destroy vitamins; therefore vegetables, canned when fresh and sealed at once, have their vitamins preserved more than vegetables cooked on the stove, as the latter lose vitamins through oxidation. Vegetables put in the can go on breathing after being canned, so that after thirteen hours there is no oxygen in the can. They are taken out of the can oxygen-free. Thus, food protected from oxidation keeps its vitamin content. Apples in storage tend to lose vitamin C content, which is lost by oxidation. If steeped in 2 per cent salt solution they are better protected. This does not, however apply to peaches, which do not have an oxygen-carrying substance. Spinach is a vegetable which has a rich vitamin B content.

DISCUSSION

Dr. George Dow Scott, New York: I was very much interested in what Dr. Eddy said about bananas. I think there is a great deal of misunderstanding in regard to the fruit, whether ripe or unripe. I have stated that a child can digest better the banana ripened on the tree, where the starch is transformed into fructose, than the banana ripened en route. The digestibility of the fruit is altered. In children having trouble with dentition I use corn meal for its carbohydrate and energy content, and I order vegetables given with the water in which they are boiled. In cases of gastrointestinal intoxication I have given raw carrot juice or turnip juice with great advantage. The teeth came more promptly and the gums improved in condition. I believe that the American diet for children has too low an inorganic salt content. By adding calcium and phosphorus, one can balance the metabolism better.

Fatigue During Work Carried on at a Regulated Rate of Speed.—Otto Graf of Munich (*Ztschr. f. d. ges Neurol u Psychiat* **101**:115, 1926) has found that work at a regulated speed is less fatiguing than work at volitional speed. As an instance of regulated speed, he mentions Ford's automobile factories, in which each worker's materials are moved up to and past him at a given speed, and his work must be carried out during the interval at his disposal. He ascribes this somewhat surprising outcome of his experiments to the fact that work at regulated speed necessarily allows for and enforces a large number of regular, though brief, periods of rest The sense of monotony also is less at the regulated speed, because the attention is not allowed to flag, and the mental fatigue of constantly refocusing the attention is avoided Graf warns against premature attempts to apply the findings of these preliminary studies generally in industry.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days No foreign journals are available prior to 1921, nor domestic prior to 1924. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

37: 1-179 (March 15) 1926

Polynuclear Ova and Polyovular Follicles in Opossum and Other Mammals: Problem of Fecundity. C. G. Hartman, Austin, Texas —p 1.
Renal Circulation: Finer Distribution. D M. Morison, San Francisco. —p 53.
Jugular Lymph Sac in Albino Mouse. G. M Higgins, Rochester, Minn. —p 95.
Relative Viability of *Male and Female* Mouse Embryos. E. C. MacDowell and E. M. Lord, Cold Spring Harbor, N. Y.—p. 127.
Studies in Hyperthyroidism. II. Significance of Changes in Thymus Glands of Thyroid Treated Tadpoles C. C. Speidel, University, Va. —p 141.
***Development* of Hypophysis Cerebri in Man: Pars Tuberalis. W. J. Atwell, Buffalo.—p. 159.

Development of Hypophysis Cerebri.—Atwell's studies lead him to suggest that it seems not unlikely that certain of the tumors described by Erdheim as arising from "rests" of the craniopharyngeal duct are in fact tumors of the pars tuberalis.

American Journal of Hygiene, Baltimore

6: 197-318 (March) 1926

Extraction of Vitamin B from Wheat Germ. E. V. McCollum and H. D. Kruse, Baltimore —p 197.
Comparison of Pigeon and Rat as Test Subjects for Vitamin B. C. N. Laird, Baltimore.—p 201.
Nutritional Requirements of Nursing Mothers: Rickets. A. H. Grant and M. Goettsch, Cincinnati.—p *211*.
Id A. H Grant, Cincinnati.—p. 228
Variations in Fat Soluble Vitamin Content of Eggs, Resulting from Different Methods of Preservation. I. A Manville, Portland, Ore.—p 238
Experimental Kala Azar in Hamster Cricetulus Griseus M. Edw. C. W. Young, H. J. Smyly and C. Brown, Peking —p. 254.
*Primary Toxicity of Heterophile Immune Rabbit Serum for Guinea-Pigs: Apparent Relation to Anaphylaxis W. W. Redfern, Baltimore.—p. 276.

SUPPLEMENT

6: 1-171 (March) 1926

Female Hypopygia of Anopheline Mosquitoes: Brazilian Species. N. C. Davis —p 1.
Dispersion of Resting Anopheline Mosquitoes from Dwellings in Brazil N. C Davis —p 23
Relation of Type of Soils of Alabama to Distribution of Hookworm Disease D L Augustine, Andalusia, Ala , and W. G. Smillie, Boston. —p 36.
Soil Infestation with Hookworm in Southern Alabama from October, 1923, to September, 1924 D. L Augustine, Andalusia, Ala —p 63.
Accuracy in Dilution Egg Counting Method. N. R. Stoll, Baltimore, and W. C Hausheer, New York —p. 80.
Concerning Two Options in Dilution Egg Counting: Small Drop and Displacement. N R. Stoll, Baltimore, and W. C. Hausheer, New York —p 134.
Dilution Flotation Technic for Counting Hookworm Ova in Field Surveys F. C. Caldwell and E L Caldwell, Andalusia, Ala —p 146
Hookworm in Ceylon: High Incidence with Moderate Degree of Infestation. J. F. Docherty, New York —p. 160

Cause of Death in Anaphylaxis.—The cause of death in *true anaphylaxis*, Redfern feels, is primarily due to contraction of the smooth musculature of the body. From his studies it seems that in primary antiserum toxicity the rapidly increased permeability of endothelial linings and cell membranes is the most significant factor. The hemorrhagic and edematous condition exhibited by the lungs, the hemorrhagic local areas in the skin, and the failure of smooth muscle to contract in vitro all substantiate this belief.

American Journal of Public Health, Albany, N. Y.

16: 207-341 (March) 1926

Analysis of Death Rate in Detroit. W. J. V. Deacon, Lansing, Mich. —p. 207.
Carbon Monoxide and Automobile Exhaust Gases. E. R. Hayhurst, Columbus, Ohio —p 218
Survey of Cities by United States Public Health Service. H. S. Cumming, Washington, D. C.—p. 224.
Outbreak of Botulinus Poisoning in Solon, Ohio. E. R. Hayhurst, Columbus, Ohio —p 228
Health Examination of Preschool Child B S Veeder, St Louis —p. 230.
Possibilities in Dental Hygiene J. DeW Cross, Boston —p 234
Renovation in Swimming Pool Control. W. D Stovall, S. Nichols and V. E Vincent, Madison, Wis —p 237.
Federal Control of Hazardous Substances J. A Tobey, Washington, D C —p 244
Protection of Highway Water Supplies. E. L Waterman, Iowa City. —p 250
Effect of Storage and Changing Sea Water on Contaminated Oysters. C. Krumwiede, W H Park, G Cooper, M Grund, C. H. Tyler and C. Rosenstein, New York —p 263
Sources of Material E G Routzahn, New York —p 268.
Occupational Syndrome Among Workers in Zinc. C. P. McCord and A Friedlander, Cincinnati —p 274
Determining Germicidal Efficiency of Disinfectants. G. F. Reddish, Washington, D C —p 283
Functions of State Bureau of Vital Statistics W. T. Fales, Montgomery, Ala.—p 287

American Journal of Roentgenology and Radium Therapy, New York

15: 193 294 (March) 1926

Physical and Biologic Problems in Heliotherapy I. Standardization of Ultraviolet Lamps for Clinical Use. E A. Pohle, Ann Arbor, Mich. —p 193.
Treatment of Intra Oral Carcinoma by Contact Application of Radium. G. W Grier, Pittsburgh —p 201
Radium *Emanation in Treatment of Cancer of Tongue* and *Other Parts* of Oral Cavity. F E Simpson and B E. Flesher, Chicago —p *204*
*Results Obtained in One Hundred and Twenty Seven Cancers of Tongue Treated by Radium and Roentgen Rays B. F. Schreiner and H F. R Brown, Buffalo —p 207.
Curie Therapy of Epidermoid Carcinoma of Intra Oral Group as Carried Out at Radium Institute, Paris M. Lenz, New York —p 210
Roentgen Ray Study of Five Hundred Children for Thymic Enlargement. C. W. Perkins, New York —p 216
Estimating Size of Thymus F O Coe, Washington, D. C —p 222
Similarity of Roentgen Ray Findings in Multiple Myeloma and in Sporotrichosis. W Altschul, Prague, Czechoslovakia —p *224*
Roentgenographic Demonstration of Trachea and Bronchi. P M. Hickey and A. C Furstenburg, Ann Arbor, Mich —p *227*
*Value and Safety of Simplified Method of Pneumo Encephalomyelography. F. Liberson, New York —p 231
Traumatic Coxa Vara W. Colin, New York.—p 242

Results of Radiotherapy of Cancer of Tongue.—Primary cancer of the tongue has been healed by Schreiner and Brown with radiotherapy in sixteen out of forty-six cases in which the disease was localized for periods varying *in time up to* four years and one month. In cases showing metastases only palliation was effected. In eleven out of seventy-seven patients with metastases, the primary lesion healed; six recurred on the tongue in from two months to one year after, and the remaining five remained healed at the time of death, which was caused by metastases in the neck.

Pneumo-Encephalomyelography.—A method of simultaneous displacement of the cerebrospinal fluid by air is *described by* Liberson with illustration of mechanism and technic, and its use is emphasized in cord cases, and cases other than brain tumors. The safety of the method is compared with other methods, by citing the immediate and remote after-effects as observed in forty cases.

American Journal of Tropical Medicine, Baltimore

6: 115 166 (March) 1926

*Cure of Clonorchiasis by Tartar Emetic A C Reed and H. A. Wyckoff, San Francisco —p 115
*Amebic Colitis Transduodenal Medication. A. F. R. Andresen, New York —p 119
*Tertiary Lesions of Frambesia Tropica, or Yaws. L. H. Bittner, Buitenzorg, Java —p 123
*Experimental Rat Bite Fever. M Theiler, Boston —p 131.
*Significance of Cholesterol in Tropical Hydrocele H. M. Stenhouse, St Croix, V. I.—p 143
Occurrence of Anopheles Vestitipennis in Porto Rico H A. Johnson. —p 153
Influence of Obstacles Unconsciously Erected Against Anophelines (Housing and Screening) on Incidence of Malaria. M. F. Boyd, New York. —p 157
Pseudospirochetes of Leptospira. H. Vervoort, Medan, Sumatra —p. 165.

Tartar Emetic in Clonorchiasis.—In the case reported by Reed and Wyckoff, in the final series of thirty-four intravenous injections a total of 2 3 Gm. (35 grains) of tartar emetic was given in a period of five months. In addition to and preceding this series, the patient received *four* intramuscular injections of tartar emetic totaling 0 26 Gm and three intravenous injections of 1 per cent solution, totaling

0.1 Gm. No dangerous reactions were encountered. At no time did the urine show renal irritation. The first stool negative for clonorchis ova was after the fourteenth injection. After the eighteenth injection, one egg only was recovered, viz., after the twenty-third injection.

Amebic Colitis.—In amebic dysentery the active amebas are protected from destruction by the plugging up of the ulcers with débris. This plug, Andresen says, can be removed by the transduodenal enema. Powdered ipecac, given through the tube immediately after the ulcers are cleaned out, can get in its effect where most needed. Emetine, given hypodermically, may be a useful adjuvant.

Tertiary Lesions of Frambesia Tropica.—Bittner contends that rhinopharyngitis mutilans, keratoma plantare sulcatum, and juxta-articular nodules are all tertiary lesions of frambesia tropica or "yaws." Neo-arsphenamine is almost a specific in treatment of these cases.

Experimental Rat-Bite Fever.—A spirochete closely resembling *Spirochaeta morsus-muris* was demonstrated by Theiler in the blood of guinea-pigs and white mice injected with the blood taken from a typical human case of rat-bite fever. White mice and rats are readily infected with the spirochete. These animals show no symptoms but harbor the organism in the blood for a long time. Guinea-pigs inoculated with the spirochete, after an incubation period of from six to fifteen days, develop fever, enlargement of the lymph glands, inflammation and later induration of the external genitals and loss of hair. Rabbits were infected by subcutaneous, intradermal, and intratesticular injection of blood containing the spirochetes. About half of the animals used developed no symptoms, but their blood was infective for guinea-pigs for three weeks after inoculation. In the serum of infected rabbits, strong spirocheticidal properties are developed.

Significance of Cholesterol in Lymph Stasis.—Stenhouse is of the opinion that cholesterol has something to do with the production of lesions associated with, characterized by or resulting from an obstruction of lymph channels, and that it is the cholesterol that causes the obstruction.

Archives of Dermatology and Syphilology, Chicago

13: 465-600 (April) 1926

*Use of Mercurochrome-220 Soluble in Treatment of Infectious Diseases of Skin. H. H. Young, J. H. Hill and W. L. Denny, Baltimore.—p. 465.
Lichen Planus Erythematosus. C. D. Freeman, St. Paul.—p. 489.
*Syphilitic Alopecia: Relation to Neurosyphilis. U. J. Wile and G. H. Belote, Ann Arbor, Mich.—p. 495.
*Blood Cholesterol Findings in Syphilis and Other Skin Diseases. I. Rosen and F. Krasnow, New York.—p. 506.
*New Application for Varicose Ulcers. R. H. Davis, St. Louis.—p. 519.
Mycosis Fungoides and Kindred Conditions. W. J. Highman, New York.—p. 522.

Mercurochrome in Treatment of Infectious Diseases of Skin.—Of twenty-four patients with erysipelas treated by Young, Hill and Denny, twenty were cured or greatly improved; of eleven patients with furuncles and carbuncles, ten were cured and one greatly improved; of four cases of chancroidal ulcerations, all healed rapidly; of thirty-six patients with cellulitis and abscesses, twenty-one recovered promptly with no other treatment, and nine showed marked improvement and recovery after mercurochrome therapy, other treatment also being given; in two cases of gas gangrene, the infection was eliminated; in one patient with diabetic gangrene, an accompanying infection was checked; three patients with pemphigus showed marked improvement, two of them so far without relapse; of four patients with psoriasis, two are apparently cured, one markedly improved, and one improved, but with a relapse; one patient with eczema is temporarily improved; in one case of syphilis with exterior skin lesions, the lesions were healed; of forty-four patients with leprosy, twenty-eight were improved, with remarkable disappearance of the skin ulcers.

Syphilitic Alopecia.—Wile and Belote assert that syphilitic alopecia of the essential type has a high associated incidence of meningeal syphilis, as indicated by spinal fluid findings. Microscopic study shows that the essential syphilitic alopecia is not due to any local pathologic disturbance of the scalp, or more specifically, of the follicular apparatus. It is therefore not a true syphilid. Clinical analogy affords the suggestion that it is due to endocrine dysfunction, as a result of association and involvement of the autonomic nervous system. Symptomatic alopecia representing a smaller group of the entire syndrome is a true syphilid, apparently caused by a perifollicular plasmoma.

Blood Cholesterol in Syphilis.—The blood cholesterol was found by Rosen and Krasnow to be low in 100 per cent of patients with untreated primary syphilis, 50 per cent of the secondary cases in which treatment was not done, and in 25 per cent of the untreated tertiary cases in which treatment was not done. After treatment all primary cases showed a rise in the cholesterol content to normal or above normal, whereas in some of the secondary and tertiary cases the content remained low. The cholesterol content in 60 per cent of pregnant syphilitic women showed a high cholesterol value, 35 per cent a normal value and 5 per cent a low value. The blood cholesterol content in two infants with active manifestations of syphilis was low. The blood cholesterol content in 82 per cent of the treated patients who had congenital syphilis was normal. There seems to be no direct connection, at least as far as these studies are concerned, between the cholesterol content of the blood and the results of the Wassermann reaction. The cholesterol content of the blood was high in psoriasis and dermatitis venenata and normal in acne vulgaris, dermatophytosis and dermatitis seborrheica.

Treatment of Varicose Ulcers.—Very encouraging results are reported by Davis from the use of a solution containing 63 Gm. of boracic acid and 28 Gm. of solid potassium hydroxide to 200 cc. of water in the treatment of varicose and traumatic ulcers.

Archives of Neurology and Psychiatry, Chicago

15: 407-536 (April) 1926

*Pathology of Paralysis Agitans. C. M. Byrnes, Baltimore.—p. 407.
Sensory Disturbances in Tumors of Cervical Spinal Cord. F. Tilney and C. A. Elsberg, New York.—p. 414.
*Gross Pontile Bleeding in Traumatic and Nontraumatic Cerebral Lesions. G. Wilson and N. W. Winkelman, Philadelphia.—p. 455.
*Correction of Colloidal Gold Solutions as Applied to Lange Reaction. N. Novick, New York.—p. 471.
Delayed Posttraumatic Intracranial Compression. A. O. Wilensky, New York.—p. 475.

Pathology of Paralysis Agitans.—Byrnes examined the muscular tissue obtained by biopsy from fourteen cases of paralysis agitans and from one case of the postencephalitic parkinsonian syndrome. In the paralysis agitans cases he found a lesion of the neuromuscular bundle which has not been described previously in this or in any other disease. It is characterized by edema, early degeneration of the intrafusal nerve and final disintegration of the entire spindle. The intramuscular nerve trunks are normal, and the surrounding musculature is, as a rule, unaltered. The lesion in the neuromuscular bundle is, therefore, essentially neuropathic and involves a specific system of proprioceptive nerve terminals. Although studied in a variety of diseases, no lesion similar to that observed in paralysis agitans has been discovered in the neuromuscular bundle. There is reason to believe that the lesion is a toxic parenchymatous degeneration of the intrafusal nerve terminals. The cause of the lesion is not known.

Pontile Hemorrhage in Cerebral Lesions.—Wilson and Winkelman report thirteen cases, each of which presented pontile hemorrhage, usually multiple; in addition, every brain showed an extrapontile lesion. Of the thirteen cases, five were traumatic, four vascular, three neoplastic and one an abscess. This series of cases of bleeding into the pons is taken from 129 necropsies, of which twenty-six were traumatic, forty vascular, fifty-two tumors and eleven abscesses, making the incidence about 10 per cent.

Titration of Colloidal Gold Solution.—A method of titration of a good colloidal gold solution, a 1 per cent sodium chloride solution to the extent of 1.7 cc. as an indicator being used, is suggested by Novick. This salt is an electrolyte and a precipitant of colloidal solutions, and serves as an accurate and highly satisfactory indicator of the reaction state of a prepared colloidal gold solution.

Archives of Ophthalmology, New Rochelle, N. Y.

55: 103-211 (March) 1926

Phaco-Anaphylactic Endophthalmitis. A. Rötth, Pécs, Hungary.—p. 103.
Globular Masses on Pupillary Margin in Acute Circumscribed Chorioretinitis. H. Friedenwald and J. S. Friedenwald, College Park, Md. —p. 113.
Basophilic Staining of Bruch's Membrane. F. H. Verhoeff and R. J. Sisson, Boston.—p. 125.
Large Exostosis of Orbit Successfully Removed by Operation. A. Knapp, New York.—p. 128.
Case of Melanosarcoma of Palpebral Conjunctiva. W. C. Posey, Philadelphia.—p. 131.
Case of Keratitis Punctata Superficialis Improved by Use of Conjunctival Flaps. A. L. Brown, Cincinnati.—p. 136.
Neoplasms of Lacrimal Gland: Three Cases. A. O. Pfingst, Louisville, Ky.—p. 139.
Serous Tenonitis. G. N. Brazeau, Milwaukee.—p. 152.
Use of Slit Lamp in Differential Diagnosis Between Glioma and Pseudoglioma. T. H. Butler, Birmingham, England.—p. 155.
Diagnosis of Intra-Ocular Tumors. E. E. Blaauw, Buffalo.—p. 159.

Boston Medical and Surgical Journal

194: 569-612 (April 1) 1926

Tumors of Bladder. J. H. Cunningham and R. C. Graves, Boston.—p. 573.
Diverticulitis of Sigmoid or pelvic Colon with Sigmoidovesical Fistula. J. W. Keefe, Providence, R. I.—p. 577.
*Infectious Muscular Erosion: End-Result in Lumbar Region. M. Wolfson and L. Bryan, San Francisco.—p. 586.

Infectious Muscular Erosion.—Wolfson and Bryan trace a *deep seated abscess in the right lumbar muscles and under* the iliac crest, which yielded about a pint of foul smelling blood, degenerated tissue and pus, to an inflamed perforated retrocecal appendix. Associated with this trouble was a hernia of the ascending colon and cecum through the lumbar muscles posteriorly into a large hernial sac.

Journal of General Physiology, Baltimore

9: 387-601 (March 20) 1926

Transport of Gas by Blood of Turtle. F. C. Southworth, Jr., and A. C. Redfield, Boston.—p. 387.
Physiologic Ontogeny. VII. Concentration of Organic Constituents and Calorific Value as Functions of Age. H. A. Murray, Jr., New York. —p. 405.
Speed of Toxic Action of Arsenic in Silkworm. F. L. Campbell, Boston. —p. 433.
Light Titrations. I. Starch-Iodine Reaction. J. Field, 2nd, and L. G. M. Bass-Becking, Stanford University, Calif.—p. 445.
Salt Error of Indicators Caused by Standard Alkaline Buffers Themselves. J. W. McBain, O. E. Dubois and K. G. Hay, Bristol, England. —p. 451.
Temperature Characteristics for Prepupal Development in Drosophila Melanogaster. C. I. Bliss, New York.—p. 467.
Resistance of Living Organisms to Digestion by Pepsin or Trypsin. J. H. Northrop, New York.—p. 497.
Temperature and Locomotion in Planaria. W. H. Cole, Worcester, Mass. —p. 503.
Synthetic Food Medium for Cultivation of Drosophila. R. Pearl, Baltimore.—p. 513.
Reversal of Phototropism in Diemyctylus Viridescens. T. J. B. Stier, Cambridge, Mass.—p. 521.
Distribution of Critical Temperatures for Biologic Processes. W. J. Crozier, Cambridge, Mass.—p. 525.
Distribution of Temperature Characteristics for Biologic Processes: Critical Increments for Heart Rates. W. J. Crozier, Cambridge, Mass. —p. 531.
Modification of Temperature Characteristics. W. J. Crozier and T. J. B. Stier, Cambridge, Mass.—p. 547.
Mechanism of Accumulation of Dye in Nitella on Basis of Entrance of Dye as Undissociated Molecules. M. Irwin, New York.—p. 561.
Effects of Certain Heavy Metals on Respiration. S. F. Cook, Cambridge, Mass.—p. 575.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

***27:** 1-92 (Feb.) 1926*

*Experiments with Anesthetic Gases. W. E. Brown and W. E. Henderson, Toronto, Ont.—p. 1.
*k-Strophanthidin Emesis in Cats with Denervated Hearts: Seat of Action. M. Dresbach and K. C. Waddell, Albany, N. Y.—p. 9.
Effects of General Anesthesia on Muscular Activity of Gastro-Intestinal Tract: Ether, Chloroform, Ethylene and Nitrous Oxide. G. H. Miller, Iowa City.—p. 41.
Acute Toxicity of Ephedrine. K. K. Chen, Peking.—p. 61.
Effect of Repeated Administration of Ephedrine. K. K. Chen, Peking. —p. 77.
Effect of Ephedrine on Digestive Secretions. K. K. Chen, Peking.—p. 87.

Anesthetic Gases.—Brown and Henderson point out that the methane series will probably not yield an anesthetic gas. Propylene appears a better anesthetic than ethylene, the percentage required being slightly more than half that needed with ethylene. Owing to the large amount of oxygen that can be supplied there is evidence that the metabolic effects of anesthesia are decreased to a minimum with propylene.

Emetic Action of Strophanthidin.—When kombé and *hispidus strophanthin*, and cymarin are hydrolyzed, a cleavage product, strophanthidin (or strophanthigenin), is produced. This substance retains the pharmacodynamic properties of the original glucosides in a general way, but it differs from them in that it is more easily eliminated, or somehow made inactive. Of the various effects which it can produce, the emetic action is very prominent. The emetic action has been studied especially by Dresbach and Waddell, and particularly with reference to the heart as its possible seat. It is concluded that, as the emetic action persists consistently in cats with denervated hearts, the seat of action is not in the heart, or at least not entirely in that organ. Evidence is presented in opposition to the idea that strophanthidin emesis is reflex, and the opinion is offered that it is entirely central. The bearing of this conclusion on the explanation of the emetic action of digitalis bodies in general is pointed out.

***27:** 93-180 (March) 1926*

Comparative Studies of Propylene, Ethylene, Nitrous Oxide and Ether. C. Reynolds, New Orleans.—p. 93.
*Acute Aniline Poisoning. I. Experimental. A. G. Young, Ann Arbor, Mich., C. W. Muehlberger and W. J. Meek, Madison, Wis.—p. 101.
Id. II. Hematologic Studies. A. G. Young, Ann Arbor, Mich.—p. 125.
*Id. IV. Toxicologic and Hematologic Studies of Acetanilid Poisoning. A. G. Young, Ann Arbor, Mich., and J. A. Wilson, Madison, Wis.—p. 133.
Effects of Carminative Volatile Oils on Muscular Activity of Stomach and Colon. O. H. Plant and G. H. Miller, Iowa City.—p. 149.
Nephropathic Action of Dicarboxylic Acids and Their Derivatives: *Alkyl-*, Hydroxy- and Keto-Acids. R. C. Corley and W. C. Rose, Urbana, Ill. —p. 165.

Acute Aniline Poisoning.—Experimental production of acute and chronic aniline toxemia failed to produce methemoglobin as shown by spectroscopic and chemical analysis. In the acute stage of aniline intoxication, there is a relative increase in erythrocytes, hemoglobin and oxygen capacity, with a very low blood pressure simulating a condition of shock. Chronic aniline poisoning produces an anemia with the accompanying symptoms, as emaciation and weakness. The brownish discoloration of the blood and urine is due to the presence of paraminophenol, which is held in the blood plasma and which does not influence the oxygen capacity of the blood. Hence, Young says, in aniline poisoning (especially in the acute stage) cardiac and not respiratory treatment is indicated.

Acetanilid Poisoning.—Young and Wilson assert that the action of acetanilid on the heart, blood and circulation is essentially the same as that of aniline. Acetanilid, like aniline, forms paraminophenol in the blood plasma and urine. This may account in part for the cyanosis observed in acetanilid poisoning. Prolonged administration of sublethal doses of acetanilid produces anemia and emaciation. The fall in the red cell count, hemoglobin and oxygen capacity is parallel. The first toxic action on the heart appears to be a change *in the conduction mechanism.* The *type of change* and amount depends on the rate of injection as well as the amount of drug given. Acetanilid in aqueous solution in amounts sufficient to produce the cardiac changes described do not influence the respiration to any appreciable extent.

Journal of Urology, Baltimore

15: 219-339 (March) 1926

*Epidural Anesthesia for Perineal Prostatectomy. E. C. Shaw, Baltimore. —p. 219.
*Pyelovenous Back Flow. Fate of Phenolsulphonphthalein in Normal Renal Pelvis with Ureter Tied. F. Hinman and M. Vecki, San Francisco.—p. 267.
Calcified Renal Cyst. T. J. Kirwin, New York.—p. 273.
Gonorrheal Infection of Kidneys: Case. A. Kemble, *Washington*, D. C. —p. 289.
Urethral Mucosa and Glands. E. W. Hirsch, Chicago.—p. 293.
Routine Method of Determining Complete Cure of Gonorrhea in Male. J. M. Young, St. Louis.—p. 313.
*Unusual Bladder Obstruction. W. J. Wallace, Oklahoma City.—p. 325.
Strangulation of Pelvis. V. Vermooten, Baltimore.—p. 333.

Epidural Anesthesia for Perineal Prostatectomy.—Extradural injections of various quantities of methylene blue solution were made by Shaw in eleven fresh cadavers in an effort to determine the upward extension of solutions injected through the sacral hiatus. It was found that from 15 to 20 cc. completely filled the extradural space in the sacral canal and that solution in excess of this quantity extended into the thoracic and lumbar regions of the vertebral canal. In 100 cases of perineal prostatectomy, extradural nerve block anesthesia was effected. There was 17 per cent failures to anesthetize completely. Best results were obtained with from 15 to 20 cc. of 3 per cent solution of procaine. The blood pressure was found to be the best indicator of the patient's condition. The systolic blood pressure frequently fell from 30 to 50 mm. without any change in the patient's appearance. Practically no reaction occurred in the patients receiving from 15 to 20 cc. of 3 per cent procaine. The ultimate mortality was 3 per cent. None of the deaths were attributable to anesthesia. In Shaw's opinion, the supplementation of extradural block with transsacral injection is unnecessary.

Pyelovenous Back Flow.—Hinman and Vecki assert that the content of a closed hydronephrosis is neither cumulative nor stagnant, but undergoes a continuous change, fresh material being secreted by the kidney and the excess removed by an active reabsorption, which occurs mainly through pyelovenous back flow.

Fibrous Partition in Bladder Causes Obstruction.—Wallace reports a case in which the cause of the obstruction was a fibrous partition or diaphragm extending from a point one-half inch (13 mm.) to the left of the internal sphincter forward to a point just behind the left ureteral orifice, whence it passed along the interureteric ridge, stopped just short of the right ureteral orifice, and had an attachment at a point one-eighth inch (3 mm.) from the right internal sphincter. It was a firm thin membrane about 1 inch (2.5 cm.) high and not more than one-twentieth inch (1 mm.) in thickness. It constituted a distinct diaphragm or septum, which divided the bladder into two portions, each one of which was capable of holding a considerable amount of urine. Under the influence of straining, this fibrous band was drawn downward toward the internal sphincter, so that it practically occluded the urethral orifice, and thus prevented normal emptying of the bladder.

Maine Medical Association Journal, Portland

17: 43-62 (March) 1926

Problem of Subnormals in Maine. S. E. Vosburgh, West Pownal.—p. 43.
Toxicoderma. B. F. Felden, Portland.—p. 49.
Public Health Examination. H. Jameson, Rockland.—p. 55.

Minnesota Medicine, St. Paul

9: 151-216 (April) 1926

*Urinary Antisepsis. E. Davis, Omaha.—p. 151.
*Hexylresorcinol in Urinary Tract Infections in Women. H. M. N. Wynne, Minneapolis.—p. 156.
Urology in Surgical Differential Diagnosis. A. E. Sohmer, Mankato.—p. 161.
Cauda Equina Lesion. J. C. Hultkrans, St. Paul.—p. 169.
*Occurrence of Froin Syndrome in Diversified Spinal Lesions. G. R. Kamman, St. Paul.—p. 173.
*Pulmonary Embolism. S. F. Herrmann, Welcome.—p. 180.
*Causes of Death in Diabetes Mellitus. A. H. Beard, Minneapolis.—p. 184.
Legal Pointers. W. H. Oppenheimer, St. Paul.—p. 186.
Full-Time Clinical Teaching. E. P. Lyon, Minneapolis.—p. 189.
Public Health in Minnesota. O. E. Locken, Crookston.—p. 194.
Requirements for Admission to State and County Sanatoria and Sanatorium Supervision by Tuberculosis Division of Department of Public Institutions. L. G. Guyer, St. Paul.—p. 198.

Urinary Antisepsis.—Davis discusses the drugs with laboratory findings such as to indicate a theoretical clinical value and which will cause the secretion of the antiseptic urine by normal human individuals. Chlor-mercury fluorescein has not as yet received a thorough clinical trial. Acriflavine is of distinct clinical value in acute urinary infections, but gives results in chronic infections that are inconstant and not permanent. Furthermore, chemically pure acriflavine is obtained with difficulty, and gastro-intestinal symptoms are not infrequent. Mercurochrome-220 soluble seems to have given good results in some cases, but is not dependable. Besides, there are severe reactions associated with the intravenous administration of mercurochrome. It is excreted in the urine only in small percentage. Mercurochrome is of definite and proved value in the form of local instillations into the bladder or posterior urethra. Hexylresorcinol is of splendid experimental promise, but awaits clinical confirmation. Promiscuous medication with so-called urinary antiseptics without painstaking investigation to eliminate mechanical or systemic causes of infection is distinctly contraindicated.

Hexylresorcinol in Urinary Tract Infections in Women.—The clinical evidence reported by Wynne is said to support the claim that hexylresorcinol exerts a distinct antiseptic action in the urine of patients suffering from urinary tract infections whether due to coccal or bacillary infections. This action is apparently sufficient to disinfect completely the urinary tract in some cases.

Occurrence of Froin Syndrome.—The syndrome of xanthochromia and massive coagulation, or the Froin syndrome, consists of a yellow spinal fluid which coagulates spontaneously on standing. Kamman observed the syndrome of xanthochromia and massive coagulation (*a*) above and below tumors of the spinal cord, (*b*) in diffuse syphilitic lesions of the central nervous system, and (*c*) in a case of cord compression by an extradural abscess.

Pulmonary Embolism.—In the presence of known thrombosis, or when an unexplained slight postoperative fever suggests the possibility of hidden thrombosis, Herrmann says the development of embolism should be kept in mind. The distinctive feature in each of seven cases reported, which should suggest the diagnosis of embolism, was the very abrupt onset. Initial symptoms are: sudden anxiety and restlessness, with dyspnea, tachycardia, precordial oppression, persistent belching, and a shocklike state with rapid soft pulse, cold extremities, and profuse perspiration. In the course of several hours there follow pleuritic pain, fever, bloody sputum, and the appearance of a dull area in the chest, especially over the right lower lobe, with distant or absent breath sounds, and often a friction rub. The bronchial breathing and râles of pneumonic consolidation are lacking. Cyanosis is extreme in massive embolism.

Causes of Death in Diabetes.—Whereas 75 per cent of deaths in cases of diabetes before the advent of insulin were caused by coma, today the greater number of deaths are due to cardiovascular diseases. As a result, many cases can be prevented or postponed by the proper education of the patient. The responsibility of the doctor rests in the early detection of typical symptoms and laboratory findings of acidosis.

New York State Journal of Medicine, New York

26: 293-334 (April 1) 1926

Etiology of Cancer. I. Levin, New York.—p. 293.
Surgical Exposure of Deepseated Inaccessible Neoplasms for Proper Implantation of Radium. P. E. Durham, New York.—p. 301.
*Stoffel Operation for Spastic Paralysis. P. Lebreton and R. M. Cleary, Buffalo.—p. 307.
*Treatment of Scarlet Fever. P. A. Bly, Rochester.—p. 309.
Influenza and Measles, Their Epidemiologic Similarity. E. S. Godfrey, Jr., New York.—p. 312.

Stoffel Operation for Spastic Paralysis.—Lebreton and Cleary have operated on seventeen patients with spastic paralysis. Five were hemiplegias and the remainder mostly paraplegias. In eight cases the internal popliteal nerve was attacked; in five, the obturator; in three the median, and in one the sciatic nerve. There were no infections. One boy died soon after operation, the cause of death being acute tonsillitis, endocarditis and general septicemia. The necropsy showed clean wounds over the obturator nerves. Excluding this one case, there remained sixteen cases, of which one half could be classified as good results. Four showed only fair results, and four poor results.

Treatment of Scarlet Fever.—The thirty-four cases reported by Bly are divided into three groups: Twelve patients received convalescent whole blood, with a mortality of 25 per cent. Of these, eight were in desperate condition. Two of the fatal cases showed hemolytic streptococci in the blood culture, while acute nephritis caused the third death. Ten patients received convalescent blood serum; all recovered. Twelve patients received Dochez' serum; all recovered. Dochez serum appeared to bring about a more rapid improvement in the symptoms of the toxemia, and, particularly, an earlier disappearance of the exanthem. Every patient was kept in bed at least twenty-one days, counting from the first day of illness. In the absence of renal involvement, the drinking of generous amounts of water was urged. Frequent washing of the lower bowel with physiologic sodium chloride solution is done. When the angina is severe, the necessary amount of water may be introduced in this way. Believing that attention to the throat and nasopharynx decreases the incidence of middle ear involvement, Bly very gently flushes out the nasopharynx, and then the fauces are painted with a 20 per cent solution of mild silver protein All this is done six or eight times in the twenty-four hours. In 1,133 patients with scarlet fever treated at the Rochester Municipal Hospital, otitis media occurred in 7.95 per cent. Nephritis was a complication in 1.63 per cent of the cases.

Ohio State Medical Journal, Columbus

22: 297-374 (April 1) 1926

Differential Diagnosis of Brain Tumor: What May Be Expected from Surgery. C. E Locke, Jr., Cleveland —p 301.
*Nonspecific Protein Therapy (Milk) in Treatment of Certain Diseases of Skin and Syphilis H. V. Weirauk, Columbus —p 305
Autoserum Treatment of Chronic Encephalitis A. D. Finlayson and L J. Karnosh, Cleveland —p 309.
Relation of Practicing Physician to Preventive Medicine. H. J. Powell, Bowling Green —p. 314.
Is Cesarean Section Ever Justifiable When Child Is Dead? M. Millikin, Hamilton —p. 317.
Vesical Calculi. E. R. Gillette, Toledo —p 319.

Nonspecific Protein Therapy of Carbuncles and Syphilids.—In Weirauk's opinion, milk injections constitute the method of choice for treating carbuncles. The favorable effect, if such is forthcoming, manifests itself promptly, and such an effect will be secured in a majority of cases If there is no improvement after two or, at a maximum, four days, the case can be handled surgically. The same conclusions are justified with reference to cases of furunculosis. Syphilitic skin lesions show marked improvement or even complete regression following a course of milk injections. The latter, also, appear to be productive of good results in the management of old syphilitic patients who have been victims of overtreatment to their own physical detriment.

Oklahoma State Medical Association Journal, Muskogee

19: 84-111 (April) 1926

Cirrhosis of Liver. R. Q Atchley, Tulsa —p. 84.
Laennec. L A. Riely, Oklahoma City.—p. 86
Rural Obstetrics and Pediatrics L S Blachy, Oklahoma City —p 90
Management of Toxic Goiter. M. E. Stout, Oklahoma City.—p 96.
Nervous Mechanism of Digestion. A. W. White, Oklahoma City.—p 98.

Philippine Islands Medical Association Journal, Manila

6: 37-76 (Feb) 1926

Pathology of Leprosy. H W. Wade —p 37.
Medical Work at Culion Leper Colony. J. N Rodriguez —p 42.
*Ascaris Nephritis. C. M. Africa and M. P. Mendoza Guazon —p. 49.

Ascaris Nephritis.—The view that ascarides secrete toxic substances that are absorbed by the host, Africa and Guazon assert, should be given thoughtful consideration, as they may be a factor in the production of serious lesions of obscure causation found not infrequently in remote organs accompanying heavy *Ascaris* infestation. This may afford a better explanation of the toxic symptoms of ascariasis than the mere theory of "reflex action."

Philippine Journal of Science, Manila

29: 305-445 (March) 1926

*Serologic Analysis of Lepers' Serums O. Schöbl and J. Ramirez, Manila. —p 305.
Effect of Castration on Pulling Power and Endurance in Guinea Pigs. M. D Sumulong, Manila —p 327
Flora of Banguey Island E D. Merrill, Manila.—p. 341.

Serology of Lepers' Serums.—Ninety-two lepers were examined serologically by Schobl and Ramirez with the view to deciding certain doubtful points in the serology of leprosy. Slight individual differences were found to exist in lepers' serums and in normal human serums alike as to content of natural hemolysins and complement, but no distinct quantitative differences were found between the serums of lepers and those of normal persons. The amount of hemolytic complement in the lepers' serums was found to be the same as that in the serum of nonlepers and is subject to individual variations.

Physical Therapeutics, Baltimore

44: 131-194 (March) 1926

Vascular Relaxation of Splanchnic Area: Effects on Organs Involved. M L H A Snow, New York —p 131
Mechanical Vibration W Martin, Atlantic City, N. J —p 143
Clinical Value of Static Currents C R. Brooke, New York —p 150
Exercise and Mental Development. H E. Stewart, New Haven, Conn. —p 158
History of American Electrotherapeutic Association. G B Massey, Philadelphia —p 160

Radiology, St. Paul

6: 181-272 (March) 1926

Special Training for Physicians in Roentgenology G Holzknecht, Vienna —p 181
Relation of Roentgenologist and Surgeon L Frank, Louisville —p 187.
Report of Committee on Standardization of Roentgen Ray Measurements. E C Ernst and others —p 191
Imperfections of Stereoscopic Maneuver in Radiography of Chest J. J. Waring and W W Wasson, Denver —p 198
Cholecystography by Oral Method L Levyn and A. H. Aaron, Buffalo —p 204
Roentgen Ray Examination of Joints of Hemophiliacs H. P. Doub and E C Davidson, Detroit —p 217
Fractures of Os Calcis H R Conn, Akron, Ohio —p 228
Studies of Roentgen Ray Erythema of Human Skin. E. A. Pohle, Ann Arbor, Mich —p 236
Radiotherapy of Cancer of Uterine Cervix J Muir, New York —p 246.
Extremity Technic E C Jerman, Chicago —p 252
Double Gallbladder B H Nichols, Cleveland —p. 255.
Kidney Stones Case J S Derr, Atlanta, Ga —p 256
Recurring Mucous Cyst of Stomach. J. D Camp, Boston.—p. 257.

Rhode Island Medical Journal, Providence

9: 49-64 (April) 1926

*Reactions Following Use of Quinidine B Gordon, Philadelphia —p 49
Fifty Cases of Pyelitis in Children. R. M. Lord, Providence.—p 51.

Serious Reactions Following Use of Quinidine.—Gordon reviews some experimental work done to determine the cause of sudden or unexpected deaths following quinidine administration As a result of these experiments, it was found that quinidine has a peripheral depressant effect on the respiratory apparatus of cats, which proves fatal at a time when the heart, though somewhat intoxicated, is still viable. Stimulation of the respiratory mechanism by caffeine, combined with artificial breathing, provides a satisfactory means of preventing such fatalities. There is positive evidence of heart muscle intoxication and vasodilator effect following the use of the drug However, the respiratory paralysis cannot be explained in any other way than as a specific effect on the respiration and not as the indirect result of the low blood pressure. Successful methods of resuscitation substantiate this view. Experience in the clinic with one patient, who died following quinidine therapy and who showed respiratory embarrassment some hours before death, makes it seem likely that the means of resuscitation resorted to in these experiments might be used in human cases. It is suggested that artificial respiration be employed with caffeine intravenously in doses comparable to the amount used in the animal experiments (about 0.5 Gm intravenously for the average adult).

Southwestern Medicine, Phoenix, Ariz.

10: 93-150 (March) 1926

Hospital Organization W Wylie, Phoenix.—p 99
Blood Cell Volume Index in Pulmonary Tuberculosis P. B Newcomb, Tucson —p 108
Preparation of Patient for Surgery to Insure Safety and Comfort. R J Stroud, Tempe —p 111.
Eye in Nervous Disease W A Schwartz, Phoenix —p 116
Interrelationship of Urologic Conditions and Diabetes Mellitus. C S Vivian, Phoenix —p 119
Recent Advancements in Roentgen Ray Diagnosis of Gallbladder Disease W W. Walkins, Phoenix —p 121
Indications for Operative Procedure of Gallbladder. C. S Vivian, Phoenix —p 123
Nonsurgical Drainage of Gallbladder G E Goodrich, Phoenix.—p 124
Gunshot Wound of Neck Partial Division of Cervical Cord; Death. J. A. Hardy, El Paso, Texas —p 125.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian Journal of Experimental Biology and Medical Science, Adelaide

3: 1-43 (March) 1926

Surface Tension Changes Which Underlie Muscular and Ameboid Movement. O. W. Tiegs.—p. 1.
Enzymes of Hydatid Cyst. G. R. Cameron.—p. 11.
Refrigeration of Meat: Beef. G. A. Cook, E. F. J. Love, J. R. Vickery and W. J. Young.—p. 15.
*Blood Grouping of Australian Aboriginals. J. B. Cleland.—p. 33.
*Effect of Thyroid Feeding on Estrus Cycle of Guinea-Pig and Mouse. G. R. Cameron and A. B. P. Amies.—p. 37.

Blood Grouping of Australian Aboriginals.—Among 101 natives thus far examined by Cleland in Southern Australia, no member of group IV or group III (Jansky's classification) has been encountered.

Effect of Thyroid Feeding on Estrus Cycle.—Cameron and Amies aver that the administration of thyroid extract causes in mice an increase in the duration of estrus and in the length of the whole cycle. In the guinea-pig, there is a marked change in the length of estrus, but no striking increase in the duration of the cycle.

British Journal of Medical Psychology, London

5: 257-367 (April) 1926

Spinoza's Anticipation of Recent Psychologic Developments. M. H. Smith.—p. 257.
Neurotic Character. E. Glover.—p. 279.
Psychiatry as Objective Science. T. Burrow.—p. 298.
Clinical Aspects of Certain Emotions. D. E. Core.—p. 310.
Francis Thompson: Psycho-Analytic Study. E. F. Sharpe.—p. 329.
Psycho-Analytic Study of Phantasy of St. Thérèse de l'Enfant Jésus. I. F. G. Duff.—p. 345.

British Medical Journal, London

1: 641-682 (April 10) 1926

Endocarditis. II. T. Horder.—p. 641.
Surgery of Jejunum. J. Adams.—p. 646.
*Effect of Exercise on Insulin Action in Diabetes. R. D. Lawrence.—p. 648.
*Kastle-Meyer Test for Detection of Blood. J. Glaister, Jr.—p. 650.
*Maldevelopment of Esophagus. R. Theron.—p. 652.
*Suppurating Gonococcal Epididymitis. P. C. P. Ingram.—p. 653.
*Carbon Monoxide Poisoning. J. A. Hunter.—p. 653.
Acute Hemorrhagic Pancreatitis with Epigastric Hernia. D. S. Fairweather.—p. 654.

Effect of Exercise on Insulin Action in Diabetes.—Lawrence found that the immediate effect of exercise in increasing the fall of sugar caused by insulin is very great. This occurs only during the maximum period of insulin activity—that is, from one to four hours after injection. Severe and prolonged exercise, and half the usual dose of insulin, may produce as great a fall of blood sugar as the usual dose without exercise. Besides the immediate fall of blood sugar, exercise causes insulin to burn more carbohydrate than usual and to deplete the body stores of carbohydrate. For this reason the dose of insulin succeeding exercise has often an unusually powerful effect in producing hypoglycemia. If the diet is kept constant, an increase of exercise over days and weeks allows a reduction of insulin to be made. This is one of the reasons why the dose of insulin can often be reduced early in treatment when patients leave the hospital and adopt a more active existence. If this reduction is not made, symptoms of hypoglycemia appear. When the added exercise is omitted, the insulin must be raised again.

Kastle-Meyer Test for Detection of Blood.—From experiments with this test applied medicolegally by Glaister, it would appear that it is very delicate and reliable in the detection of hemoglobin. It is apparently a worthy substitute for Day's test. With the Kastle-Meyer test there are no "borderline" results. The reaction is well marked, is practically immediate, and time is economized in not having to await soakage of the stains before applying the test, if the watch-glass method is utilized. The age of the stain does not apparently affect the delicacy of the test. The test should be used in conjunction with the microscopic examination of stains for the detection of the presence of mammalian blood corpuscles and the precipitin or serologic test in determining the source of the blood, provided the examiner has by experience of the latter test acquired sufficient knowledge to determine in an accurate manner the results obtained.

Maldevelopment of Esophagus.—In the case cited by Theron, the esophagus ended abruptly with a slight dilatation just above the level of the bifurcation of the trachea, having no connection with the latter at that point. At the same level, in the middle line posteriorly, a narrow tube, with a lumen of about 1 mm., opened from the trachea and gradually widened until it joined the cardiac end of the stomach. The stomach and duodenum were normal.

Suppurating Gonococcal Epididymitis.—Among 1,982 cases of gonorrhea, Ingram found only three cases of suppurating gonococcal epididymitis.

Carbon Monoxide Poisoning.—Two cases of carbon monoxide poisoning are recorded by Hunter in which the source of the gas was a small open grate fire.

Heart, London

12: 271-389 (March) 1926

*Case of Adams-Stokes Syndrome. S. A. Levine and M. Matton.—p. 271.
Reactive Hyperemia. H. Goldblatt.—p. 281.
Congenital Malformation of Heart with Partial Heart Block. J. G. Wilson and R. T. Grant.—p. 295.
*Veratrum Viride in Auricular Fibrillation. A. M. Wedd and A. N. Drury.—p. 307.
Unipolar Electrical Curves of Heart Muscle. A. N. Drury and G. R. Brow.—p. 321.
*Etiology of Aortic Regurgitation. I. M. Harmer.—p. 371.
Action of Nicotine on Heart Under Chloroform. A. G. Levy.—p. 387.

Adams-Stokes Disease with Syncopal Attacks.—A case of Adams-Stokes disease is reported by Levine and Matton in which attacks of syncope lasting from several seconds to about five minutes occurred. During the very long attacks epinephrine chloride was injected directly into the heart and was followed by prompt recovery. In one of these and for a period of five minutes, no heart beat could be seen, heard or felt. It is suggested that under such circumstances the customary beneficial effects from epinephrine, if given subcutaneously, would not be obtained, as the circulation is then at a standstill. In one of the major attacks, from which the patient recovered, ventricular fibrillation, lasting three and a half minutes and followed by complete inactivity of the ventricles for seventy-nine seconds, was displayed.

Veratrum Viride in Auricular Fibrillation.—Wedd and Drury summarize their clinical and experimental observations as follows: Alcoholic solutions of veratrum viride, when given to patients suffering from auricular fibrillation, produce slowing of both the auricular and ventricular rates of beating and a fall in blood pressure. These circulatory changes are independent of general toxic effects. Veratrum viride has, in addition to the vagal action already observed, a direct action, similar to quinidine, on the auricular muscle of the dog. This direct action will, on the circus movement theory of auricular fibrillation, tend to slow, and the vagal stimulation tend to enhance, the rate of the auricular oscillations. The relative preponderance of these two actions will determine the resultant auricular rate when the drug is administered to patients suffering from auricular fibrillation. The slowing of the ventricular rate by veratrum given orally occurs much earlier than that following digitalis bodies. However, as a therapeutic agent, veratrum is somewhat handicapped by uncertainty and irregularity of action. It may be useful in cases in which simultaneous slowing of ventricular rate and lowering of blood pressure is desired.

Etiology of Aortic Regurgitation.—An examination made by Harmer of 467 patients with aortic valvular disease disclosed these facts: Syphilis is an important factor in the production of aortic reurgitation; 37.3 per cent of all patients with aortic regurgitation between 20 and 70 show a positive Wassermann reaction. Rheumatism is of rather less importance and accounts for 27.2 per cent of the cases. Pure aortic regurgitation is mainly a disease of middle life, from 40 to 50, while combined aortic regurgitation and mitral stenosis is essentially a disease of young people, under 30 years of age. Fifty per cent of all cases of pure aortic regurgitation are syphilitic in origin, and 17.4 per cent rheumatic. Between the ages of 20 and 35, 44 per cent of cases of pure aortic regurgitation are rheumatic in origin and 10.7 per cent are syphilitic. From 35 to 40, 14.3 per cent of cases are rheumatic and 40.5 per cent syphilitic, while over 40 years of age, only 5.2 per cent of cases are rheumatic and 71.3 per cent syphilitic. Syphilis is of most importance as an etiologic factor in patients over 35 years of age, because syphilitic aortitis, and hence aortic regurgitation, is not pronounced enough to cause cardiovascular symptoms until from twenty to twenty-five years have elapsed from the infection. Rheumatism is of most importance as an etiologic factor in patients under 35, because rheumatic fever is essentially a disease of young people and cardiovascular symptoms due to rheumatism appear on the average 11.6 years after the attack of rheumatic fever. Syphilis and rheumatism are both of lesser importance in the causation of aortic stenosis (with regurgitation), syphilis accounting for only 20 per cent and rheumatism for only 13.4 per cent of the cases.

Indian Medical Record, Calcutta

46: 65-96 (March) 1926

Longevity. J. N. Ganguly.—p. 65.
Nonspecific Protein Therapy. A. Roy.—p. 67.

Journal of Oriental Medicine, Dairen, Southern Manchuria

4: 25-70 (March) 1926

Intravenous Bromtherapy in Diseases of Skin and Genito-Urinary Organs. S. Hidaka.—p. 25.
Immunology of B. Malleus. K. Tsuru.—p. 55.
Origin of Charcot-Leyden Crystals. E. Homma.—p. 56.
Case of Aneurysm of Heart. H. Nishida.—p. 60.
Rise and Fall of Phosphorus Content in Blood. B. Sawada.—p. 62.
Fever and Bacillus Type of Dysentery and Ekiri in Children in Manchuria. N. Hoshi.—p. 64.
Eczema. S. Kobayaski and T. Yokoyama.—p. 66.

Kenya Medical Journal, Nairobi, East Africa

2: 329-354 (March) 1926

*Treatment of Ankylostomiasis by Glycerin. H. M. Shelley.—p. 330.
Sermon to Sanitarians. F. W. Jameson.—p. 334.
Native Diet: Lesson from Rhodesia. C. J. Wilson.—p. 337.
Two Albino Africans. J. A. Ross.—p. 343.
Rare Form of Plasmodium Vivax. T. S. Cochrane and G. V. Allen.—p. 344.

Treatment of Ankylostomiasis by Glycerin.—Twenty-two patients with ankylostomiasis have been treated with glycerin by Shelley on the theory that as the mature parasite usually occupies a portion of the duodenum or the proximal part of the jejunum, if the glycerin could be given in such an amount as to form a pool around the parasite, it would dehydrate it, and by so doing kill it. The method of administration is as follows: The patient remains one day in bed on a liquid diet. One ounce (30 Gm.) of magnesium sulphate solution is administered in the evening. Next morning, from 3 to 5 drachms (11 to 18 cc.) of glycerin is given. One ounce of magnesium sulphate solution is administered the same evening. The advantages of this method are said to be that it is entirely free from danger and it rapidly relieves the abdominal pain.

Lancet, London

1: 745-794 (April 10) 1926

Endocarditis. T. Horder.—p. 745.
Diabetic Coma Without Acetonuria. T. H. Oliver.—p. 750.
Miners' Nystagmus. G. H. Pooley.—p. 750.
*New Development in Radium Therapy. J. P. McHutchison and W. H. Brown.—p. 755.
Acute Dilatation of Stomach Complicating Artificial Pneumothorax. L. R. Shore.—p. 758.
Central Nervous Disturbance Manifested by Epileptic Fit. J. P. Martin.—p. 760.
Pneumococcal Meningitis. V. M. Synge.—p. 761.

Disintegration Products of Radium Used for Skin Diseases.—The application of the later disintegration products of radium to the treatment of certain skin conditions is discussed by McHutchison and Brown. The radio elements, radium D and radium E, have been extracted from used radium emanation tubes, and in equilibrium together have been prepared for medical use in the form of applicators of different kinds. Such applicators have been found to exert a beneficial action in the treatment of lupus erythematosus, and of various types of nevi. The radiation from radium D and radium E has the unique property, so far as radium treatment of skin conditions is concerned, that it is all absorbed by the part being treated, since its effective penetration is only about 3 mm. of tissue. Radium D and E applicators retain their strength and may be used for many years; sixteen years elapse before the activity declines to one half of its original value.

Medical Journal of South Africa, Johannesburg

21: 181-204 (Feb.) 1926

Bile Drainage in Anemia of Pernicious Type: Two Cases. R. L. Girdwood.—p. 182.
Three Cases of Hydatidiform Mole. E. C. Crichton.—p. 183.
Blood Sugar and Diabetes: Literature. A. D. Stammers.—p. 184.
Gallstones: Pathologic Aspect. A. S. Strachan.—p. 189.
Id. Biochemical Aspect F. W. Fox.—p. 191.

Okayama Medical Journal, Okayama, Japan

434: 247-380 (March) 1926

Epinephrinemia Resulting from Central Glycosuria. Y. Hamazaki.—p. 247.
Amylase in Uterine Mucosa. O Saito.—p. 280.
Behavior of Leukocytes to Artificial Irritants. I. Worms. Y. Matsunami.—p. 336.
Influence of Calcium on Narcotic Action of Morphine and Chloral Hydrate. I. Tominaga.—p. 349.

Practitioner, London

116: 281-336 (April) 1926

Late and Early Carcinoma of Breast. G. L. Cheatle.—p. 281.
Early Treatment of Mental Disease. W. Brown.—p. 289.
View of an Artist on Profession of Medicine. H. Tonks.—p. 298.
Cardiospasm or Achalasia of Esophagus. F. H. Diggle.—p. 304.
Extended Use of Whole Thickness Skin Graft. P. P. Cole.—p. 311.
Analgesic Effects of Roentgen Rays in Cancer and Other Painful Disorders. F. Hernaman-Johnson.—p. 314.
Treatment of Splenomedullary Leukemia by Deep Roentgen-Ray Therapy (Erlangen Method). J. Gracie.—p. 320.
Local Anesthesia in General Practice. W. Q. Wood.—p. 324

Sei-I-Kwai Medical Journal, Tokyo

45: 1-22 (Feb.) 1926

*Blood Picture in Pulmonary Tuberculosis. K. Tanaka.—p. 1.
Glycogen in Central Nervous System of Bird. C. Koyanagi.—p. 17.
Biochemical Studies on Cholin (Trimethyloxethylammoniumhydroxide). Y. Nishida —p. 20.

Blood in Pulmonary Tuberculosis.—The blood in 100 cases of far advanced pulmonary tuberculosis in adults was examined by Tanaka. The leukocytes were always increased in number, on an average of about one fifth of the normal value, while the erythrocytes were always diminished about one fifth. The hemoglobin percentage was diminished about one fourth of the normal. In women, the count was lower than in males. There was no great difference of the color index in normal adults, or in incipient, moderately advanced and far advanced cases of pulmonary tuberculosis. The differential leukocyte count was approximately normal, except that the large mononuclears always showed an increase of about 35 per cent. Mast cells were also increased about two or three times above normal. "Shift to the left" of the Arneth count was observed not only in far advanced cases, but also in moderately advanced and occasionally in the incipient cases. The degree of dislocation to the left corresponded with the degree of advancement of the tuberculous process. On the other hand, if this count tends to assume a more right handed dislocation with a decrease of large mononuclears and mast cells, the prognosis becomes more favorable and indicates the improved result of the treatment.

South African Medical Record, Cape Town

24: 97-120 (March 13) 1926

Ocular Symptoms in Diseases of Endocrine Glands. J. Wilson.—p. 98.
Treatment of Puerperal Fever. D. Traill.—p. 106.
Conservative Treatment in Gynecology. D. H. Wessels.—p. 108.

Tohoku Journal of Experimental Medicine, Sendai, Japan

7: 1-110 (Feb.) 1926

Effect of Stimulation of Sensory Nerves on Rate of Liberation of Epinephrine from Suprarenals. T. Sugawara et al.—p. 1.
Meningococcus: Agglutination of Cooked Organisms. S. Kondo.—p. 80.
Testing Liver Function: Chromodiagnosis. T. Oka.—p. 94.
Gas Metabolism and Minute Volume in Icterus. T. Odaira.—p. 106.

Annales de l'Institut Pasteur, Paris

40: 89-168 (Feb.) 1926

Protection of the New-Born Against Tuberculosis. Calmette et al.—p. 89.
*Dysentery Anatoxin. J. Dumas et al.—p. 134.
Preventive Treatment of Rabies in Animals. E. Plantureux.—p. 141.
Cholesteremia and Glycemia in Malaria. Borel et al.—p. 152.
Microbic Galvanotropism in Animal Organism. G. Sanarelli.—p. 161.
Improved Technic for Vaccination Against Rabies. Remlinger.—p. 167.

Dysentery Anatoxin.—Dumas, Ramon and Bilal injected seven volunteers subcutaneously with 0.5 cc. of dysentery *anatoxin. A slight inflammation with* edema appeared at the point of injection, from two to four days later. It persisted for two or three days, and was not accompanied by any general reaction. A second injection (1 cc. of anatoxin) was given after eight days. Then 0.2 cc. of serum from the blood, withdrawn three weeks later, neutralized from one to four lethal doses of dysentery toxin in rabbits. Heating seemed to reduce notably the antigen property of the vaccine. The blood serum from the vaccinated did not agglutinate the Shiga bacillus or other dysentery bacilli. Thirty-one marines on a vessel on which there had been a small epidemic of dysentery on the last cruise were inoculated with the anatoxin before sailing. The ship physician reported that he did not note any morbid phenomena, except slight local reactions. Further observations will establish whether injections of the dysentery anatoxin are able to confer immunity during an epidemic, also the duration of this immunity.

Annales de Médecine, Paris

19: 5-80 (Jan.) 1926

*Abscess of the Spleen in Typhoid. C. Morel et al.—p. 5.
*Sclerodactylia with Scleroderma. L. Poussepp and I. Rives.—p. 19.
Mechanism of Elective Pneumothorax. E. Vaucher and H. Fath.—p. 28.
Clinical and Anatomic Findings in Arteritis Nodosa. Frommel.—p. 42.
Tuberculosis of Lung Lobules. D. Jaquerod.—p. 58.
Tuberculous Tracheobronchial Glands in Children. Mikulowski.—p. 67.

Abscess of the Spleen of Typhoid Origin.—In Morel, Dambrin and Tapie's case, a woman, aged 27, developed an abscess of the spleen, at the end of typhoid fever. The diagnosis wavered between suppuration of the spleen and pleurisy, until the roentgen rays revealed an abscess below the diaphragm. The left half of the diaphragm was pushed up and was immovable. There was no effusion in the pleura. The spleen was incised, and the patient recovered completely. Typhoid bacilli were found in the pus cultures. Forty-three of fifty-seven cases, cited by Grand-Moursel, ended by death; no surgical intervention had been attempted. Of thirteen cases treated by operation, a fatal issue occurred only in one. The spleen had been removed in this case. Incision of the spleen by way of the pleura and diaphragm seems to be the operation of choice for abscess of the spleen.

Scleroderma on the Fingers.—The history of Poussepp and Rives' patient was as follows: A girl with glandular tuberculosis and manifestations of sympathetic hypertonus, such as exophthalmos, inversion of the oculocardiac reflex and dilatation of the pupils, developed, at the age of 8, atrophy of the phalanges with joint lesions. The process spread to the skin, accompanied by depigmentation, dilatation of the veins and local warmth. Histologic examination showed the characteristic lesions of scleroderma. The latter occupied the domain of the cephalic vein, like a band passing from the dorsal part of the wrist to the forearm, and ending on the upper arm. Abnormal conditions in the sympathetic nervous system may have been responsible for the scleroderma. It seems theoretically plausible that these changes may have been induced by the tuberculous virus, to which the sympathetic system is peculiarly sensitive.

Annales des Maladies Vénériennes, Paris

21: 161-239 (March) 1926

Gland Syndrome on Resumption of Antisyphilitic Treatment. Stancanelli.—p. 161.
Refractory Syphilis. M. Kitchevatz.—p. 184.
*Pandy Test in Syphilis. A. Starobinsky and H. Kaufmann.—p. 192.

Pandy Reaction in Syphilis.—The Pandy test for globulin in the cerebrospinal fluid appears valuable at the onset of neurosyphilis, when the Wassermann reaction may be still negative. Starobinsky and Kaufmann recommend this test as simple, rapid and sensitive. One drop of cerebrospinal fluid is added to 1 cc. of a 7 per cent phenol solution. The reaction is positive if there is a cloudy precipitate. Of 273 tests, the Pandy test harmonized with the Wassermann in 233; in thirty-two it seemed to be more sensitive; in eight it was negative while the Wassermann test was positive. The response to the Pandy test was most intense and constant in general paresis; it was always negative in chronic nervous affections of nonsyphilitic origin. It can be applied by any physician; even at the bedside.

Archives des Maladies du Cœur, etc., Paris

19: 65-152 (Feb.) 1926

Chronologic Relations Between Auricular and Ventricular Contractions. E. Géraudel.—p. 65.
Duroziez' Intermittent Murmur. I. Mahaim.—p. 86.

19: 153-216 (March) 1926

Terminal Ventricular Tachycardia. L. Gallavardin.—p. 153.
*Artificial Pneumopericardium. J. Yacoel and R. Giroux.—p. 158.
Extrasystoles with Tachycardia. Gallavardin and Veil.—p. 164.
*Aleukemic Myelosis. S. Goia.—p. 167.

Artificial Pneumopericardium for Pericarditis with Effusion.—Yacoel and Giroux report a case of tuberculous pericarditis with effusion in a man, aged 45. Puncture releasing 350 cc. of fluid did not prevent the reappearance of the effusion in a few days. Then 600 cc. of fluid was removed, the tapping this time followed by injection of 300 cc. of nitrogen. The relief was immediate. The puncture with injection of nitrogen was repeated a month later. The patient soon improved so far as to be able to take a walk daily, without discomfort. The punctures were continued every two months, for a year, till the man died from tuberculous peritonitis. It is possible that the fatal outcome might be postponed much later, if the insufflation of the gas was made at the onset of the affection. The punctures were made in the left fifth intercostal space, 5 cm. from the sternum, using the lumbar puncture needle. The method did not cause pain or marked shock. The procedure might prove a powerful adjuvant in rheumatic or serofibrinous pericarditis; and improve recurring tuberculous pericarditis or pericarditis associated with nephritis. Artificial pneumopericardium should be preferred to pericardiotomy, which does not prevent the formation of pericardiac adhesions. The latter is indicated only in acute purulent pericarditis and tuberculous abscess of the pericardium.

Transformation of Aleukemic into Leukemic Myelosis.—Goia's patient presented marked enlargement of the liver and spleen, with blood of the aleukemic myelosis type. Grave anemia with the characteristic blood findings of leukemia developed by the end of the year. The leukocyte count increased to 60,000; there was also a large number of young marrow-cells. Aleukemic myelosis may be easily mistaken for Banti's disease. The error is fatal if splenectomy is performed. Goia suggests that injection of epinephrine might serve, as well as puncture of the spleen or trephining the tibia, to mobilize the myeloblasts, myelocytes and lymphoblasts in the blood, from stimulation of the hematopoietic apparatus. Differentiation from pernicious anemia can be based on the hyperchromemia with the latter. The clinical picture of an advanced internal cancer, with bone metastases, may be identical with that of aleukemic myelosis. Only careful roentgenography may avert the mistake. Aleukemic myelosis, not pseudoleukemia, is the proper term for the disease.

Bulletin de l'Académie de Médecine, Paris

95: 303-328 (March 23) 1926

Rôle of Filtrable Tuberculosis Virus in Maldevelopment of Infants. F. Arloing and A. Dufour.—p. 318.
Treatment of Cephalhematoma in the New-Born. Potocki.—p. 325

95: 329-368 (March 30) 1926

Light Therapy in Infants' Ward. J. Renault and H. Biancani.—p. 334.
*Prolonged Insulin Treatment of Diabetes. M. Labbé.—p. 336.
*Blood Cholesterol and Blood Pressure. G. Richard and J. Roesch.—p. 363.
Advantages of Chloramine for Sterilization of Drinking Water. E. Techoueyres and Pillement.—p. 366.

Results of Prolonged Insulin Treatment in Diabetes.—Of Labbé's twenty-four diabetic patients treated with insulin for two or three years, 50 per cent have died. Five died in coma, but they had neglected the dietetic restrictions, or the treatment had been inadequate or begun too late. This occurred mostly in the summer when the patients were not under close surveillance. Three patients died from an intercurrent infection with suppuration; four from tuberculosis of the lung. Labbé emphasizes that while tuberculosis complicates diabetes more frequently in France than in America, death from pneumonia in diabetes is, on the contrary, rarer in France. He concludes that prolonged insulin treatment is unable to check the progress of the morbid process; it only retards it. The action of insulin does not consist in regeneration of Langerhans' islands, but in stimulation of pancreas functioning. Recuperation of the functioning may in time, in certain cases, lead to retrogression of the diabetes, but no cure has been reported as yet.

Blood Cholesterol in Hypertension.—Richard and Roesch found no parallelism between the degree of arterial hypertension and the amount of blood cholesterol in eighty persons with high blood pressure. On the other hand, there was no connection between the content of urea and of cholesterol in the blood, although hypercholesteremia was frequently present in Bright's disease. A considerable azotemia may be accompanied by only slight hypercholesteremia. All their patients with chronic and severe headache presented a notable cholesteremia, with azotemia and blood pressure rather low.

95: 369-377 (April 6) 1926

Genatropine in Digestive Pathology. Surmont and Polonovski.—p. 370.
*Chordoma in an Infant. R. Argaud and A. Lestrade.—p. 375.

Chordoma in Sacrococcygeal Region.—Argaud and Lestrade say that their patient is the youngest in whom this kind of tumor has ever been observed. The girl, 14 months old, was examined for abdominal disturbances suggesting intestinal obstruction. The liver appeared enlarged, with metastatic nodules on the anterior surface. The discovery in the pelvis of a tumor, the size of an infant's head, in front of the sacrum, explained the liver metastases and phenomena of obstruction. A minute incision back of the anus allowed the escape of a bloody gelatinous fluid, containing elements confirming the diagnosis of a chordoma. No trauma had occurred in this case. Some bone lesion, possibly of osteomalacia nature; might have been the causal factor.

Comptes Rendus de la Société de Biologie, Paris

94: 301-360 (Feb. 12) 1926. Partial Index

*Glucose Regulation in Pregnancy. M. Labbé and M. Chevki.—p. 302.
*Intestinal Fauna in a Wild Duck. K. I. Skrjabin.—p. 307.
Vaccination Against Wound Anaerobes. Weinberg and Barotte.—p. 312.
Bronchial Spirochetosis and Gangrene. Bezançon and Etchegoin.—p. 319.
*Effect of Ultraviolet Rays on Carbohydrates. H. Bierry.—p. 330.
*Sulphur in the Blood and the Suprarenals. Loeper et al.—p. 332.
Venous Pressure in Children. L. Payan and E. Giraud.—p. 344.
Diathermy in Diabetes Mellitus. Czezowska and J. Smolinski.—p. 347.
Induced Sensibility to Tuberculin. F. de Groer et al.—p. 356.
*Anaphylactic Syndrome in Measles After a Burn. S. Progulski and F. Redlich.—p. 359.

Disturbed Glucose Regulation in Pregnancy.—Labbé and Chevki's research included fifty-three pregnant women. Glycosuria was found, fasting, in 5.8 per cent; the glycemia appeared normal in all. Glucose tolerance tests were followed by a rapid rise in the sugar content of the blood, the increase persisting longer than usual. Glycosuria was manifest in 27.7 per cent. The alimentary hyperglycemia in pregnancy may be due to disturbed glucose regulation, associated or not with exaggerated permeability of the kidneys for glucose. This seemed to be connected with insufficiency of the liver. The disturbance of glucose regulation was transient; but it reappeared in successive pregnancies, gradually becoming more pronounced. Thus it is possible that pregnancies may sometimes be responsible for the origin of diabetes.

The Helminth Fauna in a Bird.—Skrjabin found in a wild duck 251 specimens of helminths, belonging to seventeen different species. He knows of no other instance in which so many helminth species were found in one host.

Action of Ultraviolet Rays on Carbohydrates.—In Bierry's experiments, the action of ultraviolet rays on carbohydrates was analogous to that of a soluble ferment. The production of gases resembled that induced by yeasts. Thus may be produced an actual ultraviolet fermentation.

Increase of Sulphur After Removal of Suprarenals.—Loeper, Decourt and Tonnet removed one suprarenal gland in dogs. This was followed by an increase of the sulphur in the blood, and by changed oxidation ratio. This fact explains the increase of sulphur in melanoderma. The suprarenals, normally, probably retain the sulphur.

Anaphylaxis Syndrome in Measles After a Burn.—Progulski and Redlich treated a 4 year old child for second degree burns on the face and body. A similar accident had occurred a year before. The general condition was good, and the healing of the burns was progressing rapidly, when suddenly fever with rhinitis and conjunctivitis appeared the eleventh day; Koplik's spots the next day, and a typical measles eruption a day later. At the same time urticaria developed, similar to that in serum sickness; it vanished in an hour, but reappeared the next day. The child had recovered by the seventeenth day. Evidently this was a case of an anaphylactic syndrome, accompanying measles in a subject sensitized by the waste products in the burned skin. The measles eruption was the unleashing factor. The fixation of the measles antigen in the skin may release products similar to those from burns. Or there may be a certain kinship between the measles antigen and the waste products of organ tissues.

Gynécologie et Obstétrique, Paris

13: 1-80 (Jan.) 1926

The Interstitial Fallopian Tube. C. Daniel.—p. 1. C'cn, p. 81.
*Therapeutic Use of Ovarian Graft. V. Pettinari.—p. 19.
*Diagnosis of Triplet Pregnancy. S. Genell.—p. 41.
Hysterectomy After Expulsion of Mole. Lévy-Solal and Dupont.—p. 46.

Grafting of Ovary Tissue.—Pettinari applied ovary grafting in 332 animals, dogs, rabbits, rats, etc. The grafts survived only in animals of the same species and with a manifest deficiency of the sex hormone. The results were negative in cases of old ovariectomy, or after removal of the uterus. An early grafting seemed to prevent the by-effects of ovariectomy. It also stimulated the mental activity and functioning of different organs in old animals. The experimental findings afford a sound basis for ovary grafting in women. The clinical indications for it are: defective or arrested development of the sex organs; removal of ovaries and pathologic menopause; sterility of ovarian origin; syndromes from endocrine glands, also certain mental affections. Further research may prove the efficiency of ovarian grafts in senility. The purpose of the grafting may be stimulation of the ovarian gland or substitution of its function. The grafts may be implanted in the genital organs or close to them, intraperitoneally or extraperitoneally. Good results were obtained with implants in Douglas' pouch or in front of the bladder. It is possible that the retrorenal space may be advantageously used for implantation of the ovary.

Triplet Pregnancy Diagnosed by Roentgen Ray.—Genell reports a case in which palpation, abdominal and rectal, as well as auscultation of the fetal heart sounds suggested the diagnosis of a twin pregnancy. Roentgenograms revealed the presence of three fetuses. The two infants first born presented a common placenta and chorion; while the third had its own placenta and membranes. The woman died ten hours later from eclampsia without convulsions, and secondary anemia.

13: 81-160 (Feb.) 1926

Axial Torsion of Uterus with Fibroma. E. Hitzanidés.—p. 103.
*Blood Coagulation and Phlebitis. E. Chauvin et al.—p. 123.
*Remote Results of Low Cesarean Section. M. Wetterwald.—p. 131.

Blood Coagulation in Postoperative Phlebitis.—Chauvin, Esmenard and Jaur compared the blood coagulation time in twenty-five persons before and after operations. An insignificant increase was noted in most of the cases after the intervention. Gynecologic operations, although these are the ones most frequently followed by phlebitis, did not seem to influence the coagulability of the blood more than any minor surgical trauma. Neither was it more affected by general than by local anesthesia. The blood coagulation time in eight patients with phlebitis showed a constant but only slight acceleration. Thus postoperative thrombosis does not appear to be connected with blood coagulation; evidently other factors share in its mechanism.

Obstetric Future of Women After Low Transperitoneal Cesarean Section.—Wetterwald states that 45 per cent of 100 women became pregnant after a low transperitoneal cesarean section. In thirteen cases the operation was repeated; the old scar in the cervix was almost invisible. In forty deliveries, childbirth occurred by the natural route. There was rupture of the scar in one of a total of forty-five women. In 62 per cent of the cases delivery was spontaneous, while spontaneous delivery after symphyseotomy has been recorded in about 59 per cent, and after pubiotomy, in 22.7 per cent. After high cesarean section, rupture in successive deliveries occurred in 25 per cent; after cervical section, in 3 per cent. Low cesarean section is also recommended for placenta praevia; ten deliveries occurred by the vagina in eight women that had been previously treated in this way. The literature records ten ruptures in the cicatrix in 3,600 cesarean sections by this technic (0.28 per cent).

Journal de Chirurgie, Paris

27: 113-240 (Feb.) 1926

Roentgen-Ray Diagnosis of Bone Tumors. P. Moulonguet and R. Lifschitz.—p. 113.
*By-Effects of Ramisection. R. Leriche and R. Fontaine.—p. 143.

Phenomena Following Ramisection.—Leriche and Fontaine report that only slight and transient disturbances followed severing the last cervical and the first dorsal rami communicantes in their fourteen cases. Postoperative pains were noted in 14.3 per cent; in one case in the temporomaxillary joint and lower teeth; in another in the acromion. They were slight and disappeared in a few days. Pain in the frontal and occipital regions occurred in three instances, in the form of mild periodic headache. Other sensory disturbances were rare. Muscular atrophy developed in one woman in the shoulder and hand after ramisection for angina pectoris; it was associated with tactile hyperesthesia. There was in all cases a slight and transient hyperemia of the nasal, laryngeal and pharyngeal mucosa, entailing brief rhinitis, hoarseness and slight difficulty in swallowing. The operation was sometimes followed by vasodilatation of the salivary glands. After cervical sympathectomy, pains occurred in 23.5 per cent of their seventeen cases; they were intense and persisting. Frontal headache was noted in one, but in no instance were there sensory changes or muscle atrophy, although all presented slight laryngeal and pharyngeal disturbances. The postoperative changes appear as a direct result from severing certain nervous fibers, or as an indirect result from circulation changes after the operation. The pains and muscular atrophy are the direct consequences; headache, sensory, laryngeal and pharyngeal disturbances, the indirect.

Journal de Radiologie et d'Electrologie, Paris

10: 49-96 (Feb.) 1926

Radium Treatment of Cancer of the Tongue. C. Regaud.—p. 49.
Roentgenography of Bones in Congenital Syphilis. Péhu et al—p. 54.
Roentgenograms of Thoracic Aorta. Bonnamour et al.—p. 69.
Aneurysm of Descending Aorta. G. Meyer.—p. 78.

10: 97-144 (March) 1926

Lateral Radiography of the Hip Joint. Béclère and Porcher.—p. 97.
Geode Form of Generalized Osteitis. Yvernault and Montel.—p. 106.
*Papillomas of the Larynx. I. Solomon and A. Blondeau.—p. 112.
Radiologic Lesions of the Hip Joint. P. Moulonguet.—p. 115.
Roentgen Ray in Laryngeal Tuberculosis. Debicki.—p. 120.
Juvenile Osteochondritis in Foot. Schaller and Nadaud.—p. 123.
*Unification of Roentgen-Ray Dosage. A. Béclère.—p. 125.

Roentgen Ray in Treatment of Papillomas of the Larynx.—Solomon and Blondeau treated successfully multiple papillomas in the larynx of a young man. The growths, which had existed for nine years, caused hoarseness, then aphonia and dyspnea. Local interventions, even tracheotomy, were of little help. The roentgen-ray treatment had been started with a dose of 1,000 R. units, applied twice a week, to the right and left fields in the neck. After the third exposure, the tracheal cannula could be removed. After the seventh and last exposure the voice became normal. Reexamination of the patient, about eight months later, showed disappearance of the papillomas, which before the treatment had covered the whole of the vocal cords. The tracheal fistula healed; the young man was able to talk and even sing. A durable recovery was also obtained in two similar cases with 8,000 R. units applied in the course of twelve weeks.

Unification of Roentgen-Ray Units.—International standardization of the roentgen-ray unit is necessary for the future progress of roentgenography. This is emphasized by Béclère, who suggests the appointment of an international committee of roentgenotherapeutists and physicians for this purpose. A uniform roentgen-ray unit will make it possible, he says, to reproduce exactly in France a roentgen-ray treatment suggested, for instance, in America or England.

Presse Médicale, Paris

34: 385-400 (March 27) 1926

Latent Pulmonary Syphilis. M. Letulle and J. Dalsace.—p. 385.
*Intraspinal Anesthesia and Uremia. Abadie et al.—p. 387.
*Large Tumors in the Thigh. C. Perret.—p. 389.
Mental Anorexia of Adolescents and Adults. M. Nathan.—p. 390.
Medical Aviation in Peace Times. Julliot.—p. 395.

Anesthesia and the Blood Urea.—Abadie, Baldous and Dornier examined the blood of twenty-six persons operated on under intraspinal anesthesia. The urea content of the blood appeared always increased for about a week. It may be due partly to the surgical trauma, since different toxalbumins and nucleins are released from the injured tissues. This explains why azotemia is often more pronounced after major than after minor operations. Affections of the liver and kidneys, as well as old age may also be responsible for the high blood urea after an operation. On the other hand, the degree of the azotemia depends to a certain extent on the anesthetic used. It was considerably higher, for instance, with stovaine than with procaine. It is probable that the drugs act first on the sympathetic system, while the kidneys are involved secondarily. This does not interfere with the advantages of the intraspinal method, if the choice of anesthetics is made carefully.

Improved Technic for Operation on Large Tumor of the Thigh.—Perret describes the method he applied for disarticulation at the hip joint in two cases of enormous sarcoma of the thigh. The purpose is to avert embolism of neoplasm cells and to reduce the loss of blood during the intervention. The patient is kept in the Trendelenburg position during the whole operation. Through a small median subumbilical incision two ligatures, 1.5 cm. apart, are applied distad on the common iliac artery; then the incision is sutured. Then an incision is made in Scarpa's triangle, and the femoral artery and vein are severed, between two ligatures. This second incision is used for disarticulation of the hip joint. Owing to the slanting position, the blood contained in the tumor and limb flows back into the body. The effect is similar to that from autotransfusion. The general condition improved even before the exarticulation was completed. The color of the face looked more natural while the pulse became stronger and respiration deeper. The procedure may be indicated in case of grave traumatic wounds.

Revue Française d'Endocrinologie, Paris

4: 1-83 (Feb.) 1926

Exophthalmic Goiter and Addisonism. G. Etienne and G. Richard.—p. 1
*Diabetes Insipidus from Tuber Cinereum. J. Sabrazès.—p. 12.
Hypertrophy of the Breast. E. Frommel.—p. 24.
*Pathogenesis of Psoriasis. R. Carillon.—p. 32.

Diabetes Insipidus and Tuber Cinereum.—Sabrazès reports a case of diabetes insipidus in a boy, aged 15. A brief cerebrospinal meningitis, accompanying measles, at the age of 7, probably injured the tuber cinereum, and intercurrent influenza, of a nervous form, at the age of 14, seems to have awakened the latent process in the tuber cinereum, inducing phenomena of diabetes insipidus. Subcutaneous injections of pituitary extract (posterior lobe) reduced the amount of urine from 6 or 7 liters to 1.5 liter, and greatly improved the general condition. The effect of an injection persisted only for twenty-four hours; hence the injection (1 cc.) had to be repeated daily. Intensive treatment for syphilis should always be tried, since syphilis appears to be a frequent factor in the pathogenesis of diabetes insipidus. Roentgen-ray treatment may also be tried, as suggested by Towne's favorable experience.

The Sympathetic-Endocrine Basis of Psoriasis.—Carillon ascribes psoriasis to changes in the sympathetic tonus. This deranges the metabolism of the epidermis cells, and the horny layer of the skin does not develop normally. In these conditions, the slightest irritation, of traumatic or infectious origin, is able to cause desquamation; namely, the appearance of psoriasis. Epinephrine, pilocarpine, eserine and atropine, among others, may favorably modify the sympathetic tonus. If there are signs pointing to a certain endocrine gland, then a corresponding extract can be used. Otherwise, thymus extract or insulin are indicated.

Revue Médicale de la Suisse Romande, Geneva

46: 65-128 (Feb. 25) 1926

Radium Plus Surgery for Cancer of the Cervix. L. Aubert.—p. 65.
*Traumatic Hydronephrosis. C. Cornioley.—p. 82.
Pigmentation of the Skin. F. M. Messerli.—p. 101.
Roentgenography of Pericarditis. Frommel and Eghiayan.—p. 105.
Suffocating Capillary Bronchitis. M. Roch and E. Frommel.—p. 111.

Traumatic Uronephrosis.—Cornioley thinks that uronephrosis is the proper name for what is generally called hydronephrosis. He describes the case of a man in whom the sequence of hematonephrosis, sclerosis of the kidney from distention and a recent cicatrix in the kidney pelvis was revealed at the operation. A fall on the abdomen caused rupture of the pelvis along its lower border. Owing to clotting in the hematoma, the urine did not pass through the gap, thus favoring the healing. On the other hand, the clots that formed in the pelvis induced gradual obliteration of the ureter, with associated phenomena of periureteritis. It was followed by dilatation of the pelvis, and atrophy of the renal parenchyma from compression. Nephrectomy appeared as the only rational treatment since there was already compensatory hyperfunctioning of the other kidney.

Schweizerische medizinische Wochenschrift, Basel

56: 265-288 (March 27) 1926

Goiter and Iodine. Meisel.—p. 265.
"Cataract Operation." P. Knapp.—p. 266.
*Neuroses of Aviators. H. Meier-Müller.—p. 268.
*Bacteriophage Antiserums. E. Urech and H. Pache.—p. 275.
Dangers from Radioactive Substances. J. P. zum Busch.—p. 278.
*Early History of Syphilis. O. Eckstein.—p. 279.

Neuroses of Aviators.—Meier-Müller, who is chief surgeon of the Swiss Aviator Corps, and has himself experienced a few crashes, deals with the sequels of such injuries. The comparatively long period of several minutes which elapses between the realization of the imminent disaster and the final crash is horrible, and an intense reaction—beginning usually after a day or two of euphoria—is only natural. The best treatment and prevention of a neurosis consists in returning the patient to his occupation as speedily as possible. He succeeded in this way even with men whose skulls had been fractured more than once. The Swiss aviators are much better off, financially and otherwise, in service, than with a disability pension. Consequently, there are no neuroses among them. He is opposed to any compensation in the traumatic "wish" neuroses.

Bacteriophage Antiserums.—Urech and Pache produced agglutinins and amboceptors for Flexner and Shiga bacilli by intravenous injections of the homologous cultures dissolved by bacteriophages. In addition to this, these serums inhibited the action of the homologous, but not of the heterologous, bacteriophage. Prolonged contact of the serum with the bacteriophage improved the results.

Early History of Syphilis.—Eckstein reviews the early history of syphilis in China. He quotes a few passages published in 1632 by Chan-sze-ching. They are quite modern in the keen clinical observation and knowledge of extragenital and congenital syphilis. Mercury was used in treatment.

Archivio Italiano di Chirurgia, Bologna

14: 593-856 (Dec.) 1925

*Renal Tuberculosis. G. Bloch.—p. 593.
Endocanalicular Papillomas of Breast. A. M. Dogliotti.—p. 621.
*Rational Treatment of Peptic Ulcer. M. Bufalini.—p. 641.
Reenforcement of Wall of Inguinal Canal. Fusari.—p. 671.

Tuberculosis of the Kidney.—Bloch analyzes thirty-four operative cases of renal tuberculosis, including twenty women, and four bilateral cases in both men and women. The right kidney was affected in thirteen of the women. A cold abscess developed in the bed of the kidney after nephrectomy in all but ten of the total cases, even when the tuberculous lesion had been minimal. The ultimate outcome seemed to depend on the gravity of the tuberculous process in the bladder. Reflux from the bladder into the kidney left may infect the latter. Nephrectomy was done in three of the bilateral cases, with marked improvement in one patient, and another seems to be improving rapidly since the recent operation. The one patient with bilateral disease treated by nephrotomy, died three months later. It seems to be established now that nephrectomy is a comparatively mild intervention, while the results are most promising. Even with bilateral tuberculosis, removal of the least diseased kidney may give good results. It should be supplemented with local treatment of the bladder lesions.

Treatment of Gastric and Duodenal Ulcers.—Bufalini's experience and survey of the literature have demonstrated, he says, that truly radical treatment is impossible. We must be content with palliative measures, and they must damage as little as possible the anatomic and functional conditions of the organ. It is absurd and futile to suppress an organ almost completely in the attempt to cure disease in it. This is the paradoxic behavior of those who practice extensive resection.

Archivio Italiano di Urologia, Bologna

2: 293-416 (March) 1926

*Prostatectomy. G. Cattaneo.—p. 293.
Dysuria with Diverticulum in Bladder. L. Ferria.—p. 347.
Horseshoe Kidney. L. Pisani.—p. 356.
*Treatment of Movable Kidney. G. Pieri.—p. 398.
Total Infarction of Kidney. L. Pisani.—p. 403.

Suprapubic Prostatectomy.—In Cattaneo's service, the mortality of over a thousand Freyer operations has dropped from 14.38 per cent in 1909 to 1 per cent in the last hundred cases. He tabulates the details in this last group to show the outcome according to the indications and technic, warning that prostatectomy must not be done as an emergency operation. He prefers the two-stage technic. Calcium chloride arrested postoperative hemorrhage in 50 per cent of his cases, rendering tamponing unnecessary. Local anesthesia for the epicystotomy and epidural for the prostatectomy—refraining entirely from general anesthesia—have contributed to the favorable outcome.

Movable Kidney.—Pieri makes a lengthwise incision in the capsule at each side of the posterior surface of the kidney, and detaches the capsule between the incisions to form a bridge. This bridge is lifted up like a handle, and with it the kidney is suspended from the twelfth rib, slipping the handle over the rib. The technic is illustrated as applied in seven cases.

Minerva Medica, Turin

5: 1-116 (Dec. 30) 1925

*Serodiagnosis of Cancer. F. Micheli.—p. 2.
*Early Histologic Diagnosis of Cancer. B. Morpurgo.—p. 12.
Early Diagnosis of Cancer of the Breast. A. Carle and G. M. Fasiani.—p. 16.
*Idem: Mouth and Salivary Glands. L. Bobbio.—p. 19.
Idem. Throat and Esophagus. G. Gavello.—p. 22.
*Idem: Stomach. A. Ceconi.—p. 29.
Idem: Duodenum and Pancreas. P. Sisto.—p. 37.
Early Diagnosis of Intestinal Cancer. L. Fornaca.—p. 39.
Idem. G. Fantino.—p. 44.
Early Roentgenologic Diagnosis of Cancer of Digestive Organs. M. Bertolotti.—p. 46.
Diagnosis of Cancer of Biliary Apparatus. C. Gamna.—p. 53.
Idem: From Surgical Standpoint. O. Uffreduzzi.—p. 57.
Early Diagnosis of Cancer of Urinary Apparatus. Ferria.—p. 59.
Idem: Female Genital Organs. O. Uffreduzzi.—p. 64.
Idem: Male. G. Serafini.—p. 71.
Idem: Respiratory Apparatus. L. Ferrio.—p. 76.
Idem: Central Nervous System. G. Mattirolo.—p. 80.
Idem: Eye. F. S. Cirincione.—p. 86.
Idem: Skin. J. Cappelli.—p. 91.
Idem: Thyroid and Parathyroids. L. Stropeni.—p. 103.
Idem: Lymph Glands. C. Gamna.—p. 107.
*Heredity and Cancer. P. Mino.—p. 112.

Early Diagnosis of Cancer.—The twenty-two articles by leading clinicians in this issue of *Minerva* are addressed to the general practitioner. They describe the earliest warning signals for the different locations of malignant disease, and reiterate the importance of suspecting cancer and establishing the diagnosis at once, even with the most apparently harmless little lump or bleeding. Histologic examination of the uterus scrapings enabled Morpurgo to detect microscopic cancer in four recent cases. Micheli commends the meiostagmin test as approaching reliability closer than any other serologic test. Bobbio emphasizes the exceptionally and rapidly malignant character of cancers in and around the mouth; even the most harmless lesions had better be eradicated. Ceconi warns that incipient gastric cancer may induce merely subjective symptoms or none. Loss of appetite and even repugnance for certain foods are usually the first symptoms, but sometimes the appetite is long retained. Vomiting may be the first sign of trouble, and the vomiting does not relieve the patient. The sudden appearance of these symptoms in the midst of apparent health is significant, especially at the cancer age. The heredity should also be considered. In regard to heredity, inquiry as to uncles, aunts, cousins and consanguineous marriages may prove instructive. The physicians throughout the country are urged to collect data bearing on the question of heredity of cancer. A copy of this issue has been sent to every physician in Italy by the newly organized Cancer Research Institute at Turin, in charge of Prof. B. Pescarolo, Senator. The articles are based on personal observations compared with case histories, and they form an exceptional manual for detection of malignancies in their incipiency. The address is Minerva Medica, Casella Postale 399, Turin, Italy.

Policlinico, Rome

33: 397-431 (March 22) 1926

*Mercury and Bismuth. L. Philippson.—p. 397.
Waxed Paper in Surgery. D. Taddei.—p. 401.
Erythroleukemic Syndromes in Infants. G. Barbera.—p. 402.
History of Medicine. C. F. Zanelli.—p. 409.

Mercury and Bismuth.—Philippson sees only quantitative differences between the action of bismuth and of mercury in syphilis. The former is less toxic. Consequently, larger doses (0.2 Gm.) may be injected. The numerous preparations of bismuth—especially those which contain less of the metal—are superfluous.

33: 433-467 (March 29) 1926

*Blood Group Tests. P. Badino.—p. 433.
Broca's Aphasia. G. Scollo.—p. 437.
Reticulo-Endothelial System. G. Notarangeli.—p. 441.
Sarcoma of the Mediastinum. S. Pera.—p. 444.

Blood Group Tests.—Badino found panagglutinins in the plasma (obtained by addition of anticoagulants) and to a less degree in the serum which separated at the temperature of 16 or 37 C. The latter specimens agglutinated every blood, including the own, sometimes even at 16 C. He concludes that careful work—especially when the test cannot be made under exact thermal conditions—requires the use of test serums which separated from blood kept in the icebox for two hours. The panagglutinins are absorbed by the coagulum in this case.

Riforma Medica, Naples

42: *241-264 (March 15) 1926*

Decompensation in Heart Disease. A. Ferrannini.—p. 241.
Rat-Bite Disease. G. Franchini.—p. 243.
Mátéfy Test in Tuberculosis. C. Olivero.—p. 244.
The Stigmata of St. Francis of Assisi. A. Del Gaudio.—p. 253.
Italian Dermatologic Congress. A. Buquicchio.—p. 254.
Contagiousness of Laryngeal Tuberculosis. A. Della Cioppa.—p. 258.

42: 265-288 (March 22) 1926

Metastatic Abscess in the Prostate. D. Taddei.—p. 265.
Solitary Cysts in Kidneys. E. Santoro.—p. 267.
*Pharmacology of Garlic. G. Sunzeri.—p. 270.
Congenital Malaria. F. P. Annecchino.—p. 285.

Pharmacology of Garlic.—Sunzeri injected aqueous and alcoholic extracts from *Allium sativum* into dogs. A rapid drop in the blood pressure, due to stimulation of the vagus, followed. Later on, the blood pressure was lowered by an action on the blood vessels.

Memorias do Instituto Oswaldo Cruz, Rio de Janeiro

18: *1-302, 1925.* Portuguese and English Edition

Bacillary Dysentery at Bahia. G. Pacheco.—pp. 5 and 43.
*Action of Metallic Colloids on Immunization. G. Pacheco.—pp. 81 and 119.
Snakes in Brazil. O. Magalhães.—pp. 151 and 157.
*The Life Cycle of Bacteria. A. Fontes.—pp. 163 and 197.
Protozoa Observed in Brazil. C. Pinto.—p. 211.

Colloidal Metals in Relation to Immunization.—In Genesio Pacheco's extensive research on domestic and laboratory animals and in twelve clinical cases, the colloidal metals all acted in the same manner; namely, increasing the amount of agglutinins and slightly raising the temperature, but not modifying otherwise in any way the course of the infection.

The Life Cycle of Bacteria.—Fontes is convinced that there is an ultramicroscopic phase in the life cycle of bacteria which our present methods of investigation are unable to reveal. It is evident, however, that bacteria are nucleated cells, but the nucleus is dispersed. It may mobilize and condense into granulations. The granules which stain deeply with basic stains are able individually to reproduce the species. He summarizes the life cycle as: first, granular dust, then free granulations; secondly, the phase of growth, granular multiplication and cell organization, with intracellular and extracellular emission of granules; then cell division and reproduction. The third phase is the disintegration of the cell, then granular dust and granular disintegrating lysis, with free granulations and their multiplication, with cellular organization. The discovery of the bacteriophage helps to explain the bacterial mutations from endogenous principles.

Revista de la Asoc. Médica Argentina, Buenos Aires

38: 445-535 (Dec.) 1925

Tumor in Cerebellar-Pontile Region. Alurralde and Sepich.—p. 445.
*Insulin in Diabetes Insipidus. C. P. Waldorp.—p. 458.
Syndrome of Insulin Hypoglycemia. Escudero and Iriart.—p. 470.
*Tonsil Complications. E. V. Segura and J. J. Viton.—p. 485.
*Visualization of the Gallbladder. E. Lanari.—p. 505.
The Ultraviolet Rays in Pediatrics. J. M. Macera.—p. 516.

Treatment of Diabetes Insipidus.—Waldorp reports that in two cases of diabetes insipidus no benefit was obtained from insulin treatment, supplemented or not with calcium, potassium or sodium ions. Pituitary extract promptly improved the condition. Addition of insulin did not seem to enhance its effect.

Complications of Tonsillitis.—Segura and Viton reiterate that even an apparently very mild infectious process in the tonsils may be responsible for grave disease in the kidneys or other organs. One previously healthy young woman, after a slight tonsillitis which subsided spontaneously, developed tube casts, severe hematuria and finally alarming uremia. Acute nephritis is the most common complication, appearing with the flaring up of chronic tonsillitis. There may be hemoglobinuria with the albuminuria, but there is always more or less hematuria. In one patient with albuminuria, which was declining, the albumin climbed to 8 Gm. per liter during an attack of tonsillitis. In some cases, hematuria is the only sign of kidney involvement with recurring tonsillitis. Castaigne's patient had hematuria fifteen times in five or six years, without any other symptoms from the kidneys. Segura and Viton have witnessed the subsidence and nonreturn of articular rheumatism and appendicitis after tonsillectomy.

Visualization of the Gallbladder.—Lanari gives twenty-eight roentgenograms from his hundred patients tested with sodium tetraiodophenolphthalein by the vein or mouth. The Saralegui injector proved exceptionally useful. The findings are negative or inconclusive if the cystic duct is obstructed or the liver cells not functioning properly. The findings were negative for some unexplained reason in two cases of gallstones, one of gastric ulcer and one of epigastric hernia. In two cases of chronic cholecystitis without gallstones, the kidneys were large, with outlet free, and yet the gallbladder was scarcely visible while the kidney on that side gave a positive response, the pelvis and calices looking as if an opaque substance had been injected.

Revista del Círculo Médico de Córdoba

13: 1 56, 1925

Two Cases of Inguinal Poradenitis F Strada and Antenor Tey —p 3
*Laryngopathy J M Aliaga and Ergasto Marenco —p 16
Foreign Bodies in Crystalline Lens A Urrets Zavalia —p 25

Throat Disease of Gastro-Intestinal Origin.—Aliaga and Marenco describe cases of disease of the larynx which it was impossible to classify under the usual headings and which subsided under treatment of the digestive tract Recurring hoarseness, with sometimes transient aphonia, especially as night approached, and vague sensations in the larynx, suggested some grave disease, even in the absence of signs of inflammation After exclusion of all other causes, treatment of constipation change of diet and general hygiene soon restored conditions in the throat to normal One of the few cases described in detail was a girl of 16 whose constant hoarseness subsided under a change of diet Another girl, in whom tuberculosis had been diagnosed recovered under measures to promote digestion These proved effectual also in two adults, aged 35 In one case of notable hoarseness, with much mucous secretion and early fatigue, they incriminated the patient's vegetarian diet, and improvement soon followed when meat was added to the diet

Revista Médica de Barcelona

5: 1 50 (Jan) 1926

*Original Devices by an Otorhinolaryngologist R Botey —p 4
*Internal Diversion of the Bile M Corachan —p 18
*Mega Esophagus J Lentini Diaz —p 27
Kala Azar in Spain G Pittaluga —p 42
Uricacidemia, Treatment with Alkaline Mineral Waters Rouzaud —p 63
Autohemotherapy in Ophthalmology F Palomar Collado —p 68

Instruments for Ear, Nose and Throat Work.—Botey gives twenty-six illustrations of devices he has originated Among them are his intratympanic mirror which he introduces when perforation in the drum-head permits, rubber sponge tampon, taste-tester, special corn extractor, and radium applicator for the esophagus He reproduces some of the intratympanic views

Internal Diversion of Bile—Corachan gives an illustrated description of a technic which answered its purpose perfectly in a case of cancer of the pancreas with the lower common bile duct impassible After removal of the gallbladder, he twisted the stump of the cystic duct around and implanted it in the duodenum

Mega-Esophagus—As Lentini Diaz has encountered twelve cases in three years and heard similar reports from others, he thinks that mega-esophagus must be comparatively common in Spain Periods of extreme difficulty in swallowing alternate with periods of apparent health, but the latter grow progressively shorter and less frequent Pain is an almost constant symptom, some complain of it more than of the dysphagia Lavage relieves the pain but not the dysphagia Progressive dilatation of the cardia by Guisez' multiple bougie method has given the best results in his experience, apparently curing some of his patients There is generally a tendency to recurrence requiring repetition of the treatment

Revista d. l. Soc. Arg. de Neurol. y Psiq., Buenos Aires

1: 167 248 (Dec) 1925

*Mental State of Chauffeurs A Ameghino —p 167
Acute Delirium with Purulent Stomatitis H Pinero —p 180
Malaria Treatment of General Paresis G Bosch and A Mo —p 185
Intelligence and Other Tests in Psychiatry Idem —p 224
Constitutional Emotional Instability F Gorriti —p 234

The Licensing of Motor Drivers—Ameghino deplores that the Buenos Aires regulations for licensing of automobile drivers omit all reference to the mental condition, only the physical qualifications are considered One truck driver was brought to the hospital on account of sudden cerebellar motor incoordination, and an epithelioma was found at necropsy in the left ventricle, it must have been long in developing A taxi driver was brought in an epileptic somnambulistic state He had been in the habit of holding his feet constantly in a certain position so that if a seizure developed he would unconsciously brake the cab His brother happened to be in the vehicle and brought him to the hospital while still in the dazed condition The number of automobile accidents has increased from 813 in 1915 to 2 580 in 1924 In the discussion that followed Oliveira Esteves presented a motion urging the city authorities to provide for periodic examination of motor drivers Psychiatric tests are not necessary, only a good clinical examination with study of the anamnesis

Semana Médica, Buenos Aires

1 165 220 (Jan 28) 1926

*Treatment of Anthrax F Destefano and R F Vaccarezza —p 165
Constitutional Emotional Instability and the Sympathetic Nervous System I C irt —p 195
Combined [illegible] and Tuberculin Treatment in Tuberculous Pleuritis with Effusion J J Viton —p 198
Brain Tumor with [illegible] Syndrome J M Obarrio —p 205
Broken Bottle in Rectum Laparotomy, Recovery Curat and Lazala —p [illegible]
*Air in the Bladder C Heuser —p 214

Treatment of Anthrax in Man—Destefano and Vaccarezza analyze 414 cases of anthrax tabulating the outcome The mortality was 10 95 per cent in 192 cases in which a 5 per cent solution of peptone was injected intramuscularly once or twice a day until the general symptoms subsided It was 15 85 per cent in the eighty-two treated exclusively with antianthrax serum and 29 41 per cent in the seventeen treated exclusively with normal beef serum Omitting the cases in which death occurred within two days, these figures become respectively 9 04 per cent for the peptone, 10 38 for the antiserum, and 25 per cent for the normal beef serum The peptone parenteral protein therapy seems to be not only more effectual, but it does not induce serum sickness

Air in the Bladder—Heuser's roentgenograms explain the mechanism of death after insufflation of air into the bladder A small amount of air was injected to facilitate investigation of a bladder tumor but no air could be seen on roentgenoscopy The procedure was repeated with iodized oil, and the oil cast a good shadow, but the air was seen to have made its way into the kidney If the walls of the urinary passages had been fragile the air might have passed into the blood stream, with fatal air embolism This danger is greater than hitherto realized as the roentgenograms showing the air in the kidney are mistaken for air in the intestines—as happened in this case at first No more than 80 cc of air should ever be injected into the bladder

Archiv fur Kinderheilkunde, Stuttgart

77: 241 320 (March 20) 1926

*Pneumothorax in Children K Benjamin —p 241
*Pyuria of Infants M Frank —p 246
Metabolism of Infants E Muller et al —p 297
Stricture of Urethral Orifice F Gierthmuhlen —p 303
Sachs Klopstock Test A Nohlen —p 305
*Pneumonia in Infants E Burghard —p 306

Pneumothorax in Children—Benjamin points out the good prognosis of spontaneous pneumothorax in children Grave symptoms arise only with a valve pneumothorax Puncture of the chest wall usually relieves such patients

Pyuria of Infants—Frank regards pyuria due to staphylococci and streptococci as part of a general sepsis Colon bacillus pyuria is due to an ascending infection, but its main localization is in the kidney pelvis The bladder may or may not be affected Mere infection of the bladder does not cause the clinical picture of pyuria in infants nor in experimental animals

An Early Symptom of Pneumonia in Infants—Burghard recommends to approach the ear closely to the mouth of the infant Fine crepitant râles may sometimes be heard before any other signs of pneumonia are evident He advises a more frequent use of this little known method

Klinische Wochenschrift, Berlin

5: 537 584 (March 26) 1926

*Formation of Bilirubin E Melchior et al —p 537
*Electrocardiography F Schellong —p 541
Secondary Radiation with Metals A Liecnti —p 545
*Flora of the Duodenum W Lowenberg —p 548

Clinical Research on Variation. H. Rautmann —p. 551. C'cn.
The Nails in Seborrheic Eczema. W. Richter.—p 555.
Calcium in Cerebrospinal Fluid. F. Lickint —p 556
"Glycogen and Insulin Treatment" B Molnár.—p 558.
Reply. D. Adlersberg and O Porges —p 559.
*Inclusions in Erythrocytes M. Mayer et al —p. 559.
*Action of Rays on Cells R Gassul —p 560
Diverticula of Duodenum A Wierig —p 561.
Benign Infectious Epitheliomas H Martenstein —p 563.
"Relation Pathology" G Honigmann —p 565
*Angina Pectoris and Body Structure E Mester —p 583.

Formation of Bilirubin.—Melchior, Rosenthal and Licht confirm the bilirubinemia which occurs after total extirpation of the liver in dogs. They ask, however, how large is the extrahepatic formation of bilirubin when compared with the hepatic as postulated by Minkowski and Naunyn after their experiments on birds They found that extirpation of the liver in dogs prevents the development of toluylendiamine and phenylhydrazine icterus They concluded that the liver is the most important organ of bilirubin formation in mammals as well as in birds They doubt whether the reticulo-endothelial cells have any particular significance for it

Electrocardiography.—Schellong objects to needle electrodes on account of the deformation of the curve due to polarization. He prefers small copper plates applied externally

Flora of the Duodenum.—Lowenberg believes that the gastric acid is not the only cause of the relative sterility of the normal duodenum The bactericidal properties of the duodenal fluid are more important He found almost regularly an absence of this power in pernicious anemia, and frequently in inflammations of the biliary passages

Inclusions in Erythrocytes.—Mayer, Borchardt and Kikuth found in the erythrocytes of anemic splenectomized rats inclusions which stain red with the Giemsa solution Although they do not exclude the possibility of their degenerative nature, they point to a similarity with the inclusions described in Oroya fever under the name of bartonella bacilliformis.

Action of Rays on Cells.—Gassul reports his observations with roentgen irradiation of tissue cultures. Daylight is one of the possible sources of error in such experiments. Explants of spleen tissue from normal frogs did not grow so well in the plasma from irradiated frogs as similar tissue taken from irradiated frogs and cultivated in normal plasma.

Angina Pectoris and Body Structure.—Mester has never seen a floating tenth rib in any patient with angina pectoris.

Medizinische Klinik, Berlin

22: 437 474 (March 19) 1926

Insulin Treatment of Diabetes O Minkowski —p 437.
Cerebral Phenomena After Vaccination. C Leiner —p 441
Syphilis of the Aorta and Endocarditis F Pincles —p 444
*Unusual Metastasis of Erysipelas G Doberauer —p 445
*Old Primiparas K Jaroschka —p 448
Retention Tube in the Stomach H. Galewski —p 451
*Fatal Accident in Roentgen Laboratory F Polgar —p. 453
Shot Grains in Appendix Sonnenfeld —p 454
Degkwitz' Serum R Degkwitz —p 454 Reply. Kaupe.—p 455
*Hemagglutinins in Cancer. F Schiff —p. 455
Roentgen Treatment of Tuberculosis W. Landau —p 461 C'td

Unusual Metastasis of Erysipelas.—Doberauer had erysipelas of the leg seven weeks after resection of varicose veins. Six days later, hemorrhage from the bowel and grave abdominal features developed. A cecal fistula was made and the patient was recovering. The fistula was closed a month later. This provoked a recurrence of the erysipelas as well as of the abdominal disturbances, lasting for several weeks He lost 30 Kg. (40 per cent of his former weight) The abdomen was reopened but, instead of the expected abscess, only adhesions of the intestines and infiltration of the parietal peritoneum were found. Nevertheless, improvement set in immediately, and he recovered, four months after the first erysipelas.

Old Primiparas.—Jaroschka's statistics confirm Kermauner's opinion that the age of the primipara is practically irrelevant in the prognosis of labor. The percentage of complications increases with the age only because the number of infantile and hypoplastic women who conceive at last increases with the passing years.

Fatal Accident in Roentgen-Ray Laboratory.—Polgár reports another case of death of a physician who stepped on a foot contact while adjusting a wire. He believes that elimination of all the sources of danger is the most important present problem in roentgenology.

Hemagglutinins in Cancer.—Schiff comments on Weitzner's paper summarized in these columns February 6, 1926, p. 455. He attributes the latter's results to error from pseudo-agglutination which is frequent in the blood from cancer patients. Cancer patients show about the same percentages of blood groups as healthy people of the same locality.

22: 475 514 (March 26) 1926

Foreign Bodies in the Esophagus J. Zange.—p. 475.
*Insulin in Diabetes O Minkowski —p 479. C'cn.
*Roentgenology of Urethra E Langer and C. Wittkowsky.—p 483.
*The Brain in Adiposogenital Dystrophy. E. J. Kraus —p 485.
*Surgery of the Appendix Schönstadt.—p. 489.
*Treatment of Sinusitis Sondermann.—p. 490
Pneumothorax Apparatus W. Neumann —p 491.
Oxychromatic Changes of Nuclei. A. Luger and E. Lauda —p 493. C'cn.
Calcium Administration Opitz and Jung —p 497.
Results of Neurologist's Treatment T. Cohn —p 498 C'cn.
Survey on Endocrinology F Boenheim —p 500.
Roentgen Treatment of Tuberculosis W. Landau —p. 501. C'cn
Treatment of Gonorrhea and Syphilis H. Stranz. Supplement —pp 23 46.

Insulin in Diabetes.—Minkowski regards insulin provisionally as a substance which restores the faculty, lost by deficiency of the pancreas, which had enabled the individual to utilize his metabolism in a normal way as a source of energy. Its action is more pronounced in the diabetic organism because of the loss of the faculty to regulate the own insulin production Yet a "resistance" to insulin should not be construed as a proof of an extrapancreatic origin of the special glycosuria The sugar threshold may be changed by various causes A change of the susceptibility to insulin is rare. It is usually due either to an improvement or to the progress of the diabetes Infections lower the action of insulin Pus destroys it in vitro in a few minutes. Insulin should be used in diabetes with pulmonary tuberculosis except when it induces focal reactions. One of his patients in this category requires 300-400 units daily, and has taken about 25,000 units within three months. Her blood pressure increased at the same time It is not impossible that her high resistance against insulin is due to compensatory hyperproduction of epinephrine Tyramine, which paralyzes the hyperglycemia action of epinephrine, lowered her insulin requirement. Nothing similar to this could be found in other diabetes patients normally susceptible to insulin.

Roentgenology of the Urethra.—Langer and Wittkowsky describe with illustrations the technic for roentgen examination of the urethra. One of the methods used is the exposure during micturition

The Brain in Adiposogenital Dystrophy.—Kraus found chronic encephalitis of the base of the interbrain (tuber, infundibulum corpora mamillaria and substantia perforata) in a case of adiposogenital dystrophy. The pituitary was almost normal

Surgery of the Appendix.—Schonstadt attributes to the administration of castor oil many complications in appendicitis The pulse and the muscular stiffening are the most important points in estimation of the gravity of the case. Gonorrhea should be suspected in every female patient. In acute cases with gangrene, but without diffuse peritonitis, he advises to suture the peritoneum but not to tighten the sutures in the abdominal wall unless there are no signs of peritonitis after five days. He has had no death in recent years in peritonitis. He attributes this partly to luck, partly to avoiding injury to the intestines, and to good drainage through the Douglas pouch, or (in men) perineum. He describes the technic

Treatment of Sinusitis.—Sondermann draws attention to his method of treatment of catarrhal sinusitis by lowering the intranasal pressure by aspiration.

Monatsschrift für Kinderheilkunde, Leipzig

31: 587 678 (March) 1926

Familial Melanosis of the Eyeball E M Selter.—p. 587.
*Still's Disease W Reinold and T Stoeber —p. 597.
Pathology of Twins I. E Stransky —p 613.
*Treatment of Laryngeal Diphtheria. E Burghard —p. 626.

Still's Disease.—Reimold and Stoeber noted an improvement in a case of Still's disease under injections of a streptococcus viridans autovaccine.

Treatment of Laryngeal Diphtheria.—Burghard explains the details of the expectant method used by Schlossmann. If the stenosis progresses in the first twenty-four hours after injection of the antitoxin, they do not abstain from tracheotomy. It is necessary if the larynx or trachea is suddenly occluded. They always keep everything ready for a tracheotomy which may be performed in such a condition without anesthesia. Yet their main principle consists in quieting the children by giving them narcotics and yielding to every wish. An open window is always a help.

Münchener medizinische Wochenschrift, Munich

73: 475-514 (March 19) 1926

Treatment of Abortion. H. Sellheim.—p. 475.
*Exudative Pericarditis. P. M. Kamenetzky and Rabinowitsch.—p. 478.
*Serum Treatment of Pneumonia. W. Brand and R. Kochmann.—p. 479.
Interruption of Motor Nerve Conduction. Hass and Winkler.—p. 481.
Chronic Gastritis. R. Schindler.—p. 482.
Kauffmann's Experiment. K. Brucke.—p. 484.
"Artificial Abortion." A. Döderlein.—p. 485.
Venesection in Renal Insufficiency. E. Becher.—p. 488.
Chronic Diseases of Joints. W. Alwens.—p. 489. C'cn.
Hygiene in Jugoslavia. Abel.—p. 492.

Exudative Pericarditis.—Kamenetzky and Rabinowitsch regard exaggerated movability of the heart dulness in changes of the patient's position as a sign of pericardial effusion. It is pathognomonic if the shape of the dulness or of the roentgen shadow changes at the same time.

Serum Treatment of Pneumonia.—Brand and Kochmann injected a polyvalent pneumococcus antiserum in thirty-nine infants and small children with bronchopneumonia. Four of them (10 per cent) died. Of the forty-two controls, twenty-two (52 per cent) died.

73: 515-554 (March 26) 1926

*Vaccination and Paralysis. F. Plaut and F. Jahnel.—p. 515.
*A Dosimeter. H. Chaoul.—p. 518.
*Treatment of Typhoid. Hilgermann.—p. 520.
*Tannin Test for Cancer. R. Wigand.—p. 521.
Psychocatharsis and Psychanalysis. C. Römer.—p. 525.
Vaginal Acidity in Gonorrhea. F. Wirz and Legène.—p. 526.
Rupture of Spleen in Therapeutic Malaria. F. Bachmann.—p. 528.
Rupture of Uterus After Cesarean Section. H. Strache.—p. 530.
*The Reticulo-Endothelial System. E. Zebrowski et al.—p. 531.
Metreurysis by Expansible Bag. H. Baumm.—p. 531.
Treatment of Abortion. H. Sellheim.—p. 532. C'tn.
Nephritis. Schlayer.—p. 535.
Pharmaceutic Survey. Rapp.—p. 538.

Smallpox Vaccination and Paralysis.—Plaut and Jahnel found in extensive experimental research on rabbits no relations between cowpox virus and *Spirochaeta pallida* which might serve as a basis for any hypothesis of a causal connection between smallpox vaccination and general paresis.

A Dosimeter.—Chaoul has constructed an iontodosimeter which indicates directly the dose of rays which has been applied.

Treatment of Typhoid.—Hilgermann infected rabbits intraperitoneally with 5 cc. of a virulent typhoid culture. When he injected 2 cc. of a 4 per cent solution of sodium salicylate intravenously, from two to five hours later, the animals recovered, while the controls died the next day. One of the animals treated after five hours died suddenly in convulsions. This could be prevented by a preliminary injection of a typhoid antiserum.

Tannin Test for Cancer.—Wigand claims to demonstrate proteins in extreme dilutions (many millions) by addition of fresh tannin. He uses high titers of the patient's serum as the indicator of cancer. He claims that the only errors are from false negative reactions.

Phagocytosis and the Reticulo-Endothelial System.—Zebrowski and four other pupils of Wysokowicz recall attention to the latter's article published in 1886 in the *Zeitschrift für Hygiene*. He demonstrated that micro-organisms injected into the blood stream are taken up not only by motile leukocytes, but also by the endothelial cells of the capillaries, especially in the spleen, liver and bone marrow.

Wiener klinische Wochenschrift, Vienna

39: 349-376 (March 25) 1926

*Roentgen-Ray Treatment in Skin Diseases. L. Freund.—p. 349.
*Therapeutic Malaria. J. Donath and R. Heilig.—p. 353.
Iodine and Exophthalmic Goiter. J. Borak.—p. 355.
Bacterium Lactis Aerogenes. J. Burtscher and W. Meyer.—p. 356.
Racemose Angioma Near Corpus Callosum. E. Klimesch.—p. 358.
"Path of Air Through Nose." Kayser. Reply. Hofbauer.—p. 361.
History of Laryngology. H. Marschik.—p. 361. C'cn.
Physical Treatment of Gonad Endocrine Disturbances. Liebesny.—p. 363.
Leanness and Insulin Fattening. W. Falta. Supplement, pp. 1-15.

Roentgen-Ray Treatment in Skin Diseases.—Freund emphasizes that it is as necessary to protect the deep tissues as the surroundings. It is not only superfluous, but injurious, to use hard rays on superficial skin diseases, such as psoriasis, eczema, or for depilation. He uses filters (0.5 to 3 mm. aluminum) only for depilation and for processes localized under the skin. The rays should be about 7-8 We. hard. He uses 6-7 We., without any filter, in psoriasis. Combination with other procedures—for instance, excision in lupus with irradiation of the open surface—improved the results. He is gratified with the success of roentgen treatment in favus and similar formerly extremely chronic affections. He does not mind that the articles still being published on it never mention the originator of the idea.

Therapeutic Malaria.—Donath and Heilig found remarkable differences between the changes induced by malaria and by other fever-producing agents. The amino-acids increase in the blood after injection of vaccines and proteins, but not in malaria. Contrary to this, the amino-acid content of the cerebrospinal fluid increases notably in malaria, less in relapsing fever and after typhoid vaccine, and not at all after injection of milk. They believe that a focal reaction of the central nervous system accounts for the favorable influence of malaria on general paresis.

Zentralblatt für Chirurgie, Leipzig

53: 705-768 (March 20) 1926

*Traumatic Chondropathy of Patella. H. Fründ.—p. 707.
Technic for Removal of Liver in Dogs. E. Melchior.—p. 710.
*Surgery of Heart Valves. I. P. Dmitrieff.—p. 715.
Surgery of Bronchial Asthma. F. Erkes.—p. 718.
Impalement Injury. A. Rosenburg.—p. 719.
"Surgery of Cancer of Breast." E. Enderlen.—p. 720.
"Treatment of Burns" E. Enderlen.—p. 721.

Traumatic Chondropathy of Patella.—Fründ found traumatic necrosis of the cartilage of the patella a comparatively common cause of chronic disturbances. Tapping the patella with the knee extended is painless. Pain is elicited if the knee is bent and the tapping repeated. Excision of the diseased cartilage relieves the patient.

Surgery of Heart Valves.—Dmitrieff dilates the mitral valve in animals by invaginating the auricle with a finger. A similar technic—except for the small incision—serves to control an instrument which pierces the septum between the auricles.

53: 769-832 (March 27) 1926

*Illumination in Operating Room. König.—p. 770. Idem. Gontermann.—p. 772.
*Explosion in Acetylene Anesthesia. F. Oehlecker.—p. 774.
The Marking of Diapositives. F. Oehlecker.—p. 779.
Surgery of Ileus. E. Cornils.—p. 782.
Surgery of Hydrocele. A. Gabay.—p. 785.
Raspatory for Thoracoplasty. A. Plenk and R. C. Matson.—p. 786.
Surgery of Ectopic Kidney. W. Braizew.—p. 787.
Extraction of Needles and Hooks in Tissues. O. Susani.—p. 791.

Illumination in Operating Room.—König prefers a grey paint for the walls of the operating room, and a greenish grey color for the sheets covering the patient.

Explosion in Acetylene Anesthesia.—Oehlecker discusses the danger of explosion in acetylene-oxygen anesthesia. It seems that the presence of particles of oil—instead of the acetylene—accounted for two such explosions. It is not sufficiently widely known that oxygen alone may cause grave explosions when it blows over oil. A whole oxygen tank may explode if oil is used to lubricate the valves. Every oxygen tank should be labeled "Beware of Approaching with Fat or Oil."

Zentralblatt für Gynäkologie, Leipzig

50: 705 768 (March 20) 1926

*Syphilitic Injury of the Fetus L Nurnberger —p 705.
Transportation from Uterus into Tubes R Cordua —p. 720.
*Mechanism of Transportation of the Ovum. Novak and Eisinger —p 724
*Reticulo Endothelial System in Pregnancy. R Benda.—p 727.
Blood Chemistry in Pregnancy Ivanyi et al —p 731.
"Eclampsia and Calcium " P Rissmann —p 742
Fetal Asphyxia E Poeck —p 744
Intraperitoneal Obstetric Uterine Hemorrhage C Kaufmann —p 752
Models to Aid in Campaign Against Abortion E Martin —p 754
Submucous Myoma in the Puerperium H Kamniker —p 757
Dermoid Ovarian Cyst J Leibtschik —p 761

Syphilitic Injury of the Fetus.—Nurnberger regards roentgenologic examination of the infant as an essential means of diagnosis The syphilitic osteochondritis is evident in the new-born and may be the only sign of syphilis, just as may be the case with ossifying periostitis, which appears later The specific treatment of the mother before the pregnancy did not modify much the prognosis for the children In marked contrast to this, energetic arsphenamine treatment of the pregnant women resulted in 78-93 per cent of healthy children It seems also that the mother may be cured by it permanently

Mechanism of Transportation of the Ovum.—Novak and Eisinger applied a 10 per cent solution of phenol to one fallopian tube in rats This treatment which inhibits the movements of the musculature, prevented pregnancy of that side

Reticulo-Endothelial System in Pregnancy.—Benda believes that this system plays an important role in the removal of poisonous products during pregnancy It suffers if there is an overproduction of toxic substances

50: 769 832 (March 27) 1926

Prevention of Genital Prolapse M Henkel —p 769.
Schuchard s Incision A Rieck —p 773
Tuberculosis in Pregnancy F Schultze Rhonhof —p 779.
Gymnastics and Gynecology G Kaboth —p 784
*Infantilism and Matrimony T H van de Velde —p 799.
Transitory Cyanosis of the New Born J Novak —p 804
Uterus Bicornis C H Engelbrecht —p 805
*Gonorrhea in Women E Maier —p 806
Genital Tumors in Pregnancy I v Buben —p 816

Infantilism and Matrimony.—An abstract of Van de Velde's article was given on page 1592 when published elsewhere He recommends examination of every young girl, who intends to marry, for infantilism of the sex organs It is a cause of dysmenorrhea, dyspareunia, lack of sexual satisfaction, sterility, abortions and complications of labor. Moderate degrees of the condition yield to treatment. It might be advisable to notify the bridegroom and give him advice on how to behave, because of the probable frigidity, which, however, may improve later

Gonorrhea in Women.—Maier had in Opitz' clinic further good results with Damm's litmus paper test He treats gonorrhea in the female only by weak astringents (tannin in alcohol and glycerol).

Zentralblatt für innere Medizin, Leipzig

47: 257 288 (March 20) 1926

*Blood Platelets in Pernicious Anemia E Allard —p 258

47: 289 312 (March 27) 1926

The Practitioner and Abdominal Surgery. M Friedemann —p. 289

Blood Platelet Index in Pernicious Anemia.—Allard figures the index by dividing by 50 the number of platelets per thousand erythrocytes. For instance, with normal blood (250,000 platelets and 5,000,000 erythrocytes per cubic millimeter) there are 50 platelets per thousand erythrocytes Thus, the index is 1 In pernicious anemia, the index is usually low (0 2 and less) A low index is an unfavorable sign It announces an exacerbation even if the red count is comparatively high A high index with low erythrocyte count frequently precedes a remission No good remissions can be expected with less than 100,000 platelets per cubic millimeter.

Russkaia Klinika, Moscow

5: 3 182 (Jan) 1926 Partial Index

*Tests of the Vegetative Nervous System D Pletneff —p. 3
Neurogenous Origin of Gastric Ulcer. I. Davydovsky —p 32
Stability of Erythrocytes and Pathogenesis of Anemias. J. Tcherniak and M Sheshagina —p 35
*Roentgen-Ray Treatment of Uterine Myoma A Kaplan —p 93
"Adenoma Sebaceum." I. Olesoff —p 107.

Comparative Studies of the Vegetative Nervous System.—Functional tests of the vegetative nervous system were applied by Pletneff in fifty-four subjects. He used atropine or epinephrine tests, besides determining the oculocardiac reflex, dermographism and other diagnostic symptoms. He concludes that there is no justification for classification of all persons in two groups, namely, the vagotonic and the sympathicotonic Examination of different parts of the parasympathetic and sympathetic systems revealed functional dissociation of the two systems All the drugs injected were substances foreign to the body; they cannot reveal the true functioning of the living cells of any of its organs. The reaction of the organism to the injected atropine or epinephrine depends not only on the nervous system, but also on the biologic autotonus of the cell, the latter connected with the predisposition or some external cause. Clinical reactions to atropine or epinephrine do not show the true condition of the parasympathetic or sympathetic system These reactions may be considered merely the response of the organism as a whole to the drugs

Roentgenotherapy of Benign Uterine Disease.—Kaplan reports forty-five cases of fibromyoma with metrorrhagias, treated by roentgen rays All these patients have been under observation for about two years since the treatment The rays were applied to both ovaries and to the sacrum; each field given from 6 to 12 Holzknecht units. The dose had been gradually decreased Complete arrest of menstruation occurred in 97 per cent of the cases; the tumor disappeared in 40 per cent The roentgen-ray treatment did not induce any by-effects, the general condition of the patients improved notably.

Ugeskrift for Læger, Copenhagen

88: 235 260 (March 11) 1926

Inaugural Lecture on Forensic Medicine K Sand —p 235.
*The Sedimentation Test O Bouet —p 240
*The Pulse with Intracranial Disease R Lund —p 246.
Precautions Required in Extraction of Teeth Under General Anesthesia A Gullestrup —p 250
*Male Death Rate and Alcohol in Copenhagen K A Heiberg —p 251.

The Sedimentation Test.—Bouet has been studying the variations in the speed of sedimentation in 100 patients, including thirty-five with bone and muscle disease under parenteral protein therapy. The readings are more informative as to quantity than to quality. The variations throw light on the progress of the disease up or down, showing whether the objective findings parallel the subjective, and possibly dispelling the suspicion of malingering.

The Pulse with Intracranial Disease.—Slowing of the pulse was observed in from 28 to 65 per cent of Lund's 151 cases of otogenous sepsis, brain abscess, meningitis or encephalitis It seems to be due to toxic irritation of the vagus The mortality was 81 per cent among the sixty-five cases with bradycardia, while it was only 32 per cent in the eighty-six cases in which the pulse corresponded to the temperature. The highest degree of bradycardia was noted with an abscess in the brain The unilateral localized pressure from an otogenous abscess in the brain is an important factor likewise in the bradycardia, but it is not the only factor.

Influence on the Male Death Rate of the Restrictions on the Consumption of Alcohol in Copenhagen.—Heiberg presents statistics to show that the death rate of men has always been constantly much higher than the death rate of women, but since 1917 this difference has been wiped out in the ages between 25 and 55 Instead of a difference of 36, 56 and 77 per cent higher mortality, the difference is only 16 or 11 per cent or zero These decades are the ones most strongly inclined to alcoholism, and he thinks that these changes can be explained only as the effect of the restrictions imposed since 1917 on the consumption of alcohol. The female death rate has shown no change.

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ABSORPTION FROM THE LOWER RESPIRATORY TRACT

UNDER NORMAL AND PATHOLOGIC CONDITIONS *

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The problem of absorption confronts the scientific investigator in practically every field of human endeavor, in the exact as well as in the practical fields, and the mass of information thus gained will eventually lead to a more intelligent understanding of the detailed mechanism of absorption, though widely differing especially in the finer points in each special field. The inadequacy of in vitro explanations alone for biologic purposes is now and again emphatically decried by some students and with some justification, so that it would seem that the final court of decision must at present still rest in tests performed under actual existing in vivo conditions. In the biologic and medical sciences, our problem resolves itself into the solution of a complicated mechanism at the basis of which lies the intricate biology of the cell, the complexities of which we are just beginning to unravel by means of controlled researches. In many respects one should not expect absorption in the lower respiratory tract to differ from that in other parts of the body, yet the anatomic structure as well as the specialized physiologic function of this part of the human economy would certainly make one hesitate in accepting all facts derived from alien studies and applying them without reservation to the respiratory organs.

Besides the specialized differences of the cells concerned in absorption in a certain part of the body, due weight must also be given the physical and chemical nature of the substance being absorbed, whether gaseous or liquid, and in the latter case whether in solution, as crystalloid or colloid, or in suspension as particulate matter. The latter, being the more easily adjusted factor for study, has probably been given greater consideration than the tissue or cellular phase. Since gaseous exchange is one of the most significant physiologic functions of the lungs, this problem has been given major consideration, as is evident from the scientific literature on the subject, and justly so; yet there remains considerable importance attached to the subject of absorption of liquids when it is considered that the cells themselves under physiologic conditions are in a liquid state and all interchange with the outside world occurs through a liquid medium, and that under pathologic conditions the changes occurring concern to a great extent those involving the liquids of the tissues.

After the discovery of the blood and lymph circulations, interest was displayed in the proportionate parts played by these in the absorption of fluids, both normal and pathologic, and the peritoneal and pleural cavities were regarded as integral parts of the lymphatic system, though the manner of absorption of contained fluid was not clear. In 1862, the announcement of von Recklinghausen[1] that there existed open channels or stomas which established communication between the peritoneal cavity and the lymphatic system afforded a ready explanation for the absorption of fluids. Almost coincident with the refutation of the existence of stomas, Starling and Tubby,[2] in 1894, as a result of a study of the resorption of dyestuffs, peptone, proteins, sugar and salt solutions, concluded that the resorption occurred primarily through the blood vessels, in which Orlow, Heidenhain (1896) and Hamburger (1895) concurred. The latter believed that isotonic solutions were absorbed by imbibition. MacCallum,[3] in 1903, was responsible for our more rational understanding of the manner of absorption of foreign granules from the pleural and peritoneal cavities by a very slow reactive process of phagocytosis, thus stressing the importance of the cell in absorption.

The route of absorption from the serous cavities is by way of the blood and lymph vessels; and although the former are at present described in complete detail and are common knowledge, the latter are just being satisfactorily studied, and a brief review of our present anatomic information seems justified. All lymphatic vessels at their termination empty into veins, and on both sides of the body where the subclavian and common jugular veins unite. All tissue fluids and lymph from the left half of the head, the neck, the left upper extremity, the left chest, the left lung, left heart, the mediastinum, the entire abdomen, diaphragm and the greater part of the liver flow into lymph vessels emptying into the thoracic duct, while those from the right half of the head and neck, right upper extremity, right chest, right lung, right heart and a part of the liver surface flow into the right lymphatic trunk. Anastomoses between the right and left chest and those of the abdomen probably exist.

The absorption of liquids is intimately associated with the absorption of substances dissolved in them as well as the state of their solution, whether crystalloid or colloid, hypertonic, isotonic or hypotonic, but

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* From the Research Department, National Jewish Hospital.

* Chairman's address, read before the Section on Pathology and Physiology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Von Recklinghausen: Die Lymphgefässe und ihre Beziehung zum *Bindegewebe, Berlin, 1862;* Virchows Arch. f. path. Anat. **26**: 172, 1863.

[2] Starling, E. H., and Tubby, A. H.: On Absorption from and Secretion into the Serous *Cavities, J. Physiol.* **16**: *140, 1894.*

[3] MacCallum, W. G.: *On the Mechanism* of Absorption of Granular Matter from the Peritoneum, Bull. Johns Hopkins Hosp. **14**: 105, 1903.

the immediate and direct course of the absorption of liquids as solutions of crystalloids or colloids is difficult to follow unless the contained crystalloids or colloids[4] happen to be colored, can be tested by color reactions or precipitates, or are in the form of unchangeable dyestuffs originally. Most dyestuffs are, however, susceptible to reduction or oxidation changes in the body, and therefore absorption has been studied to a great extent by utilizing very fine suspensions of stable particulate matter which can be directly followed step by step, especially under the microscope. Thus developed the concept of the endothelial leukocyte by Mallory,[5] who in 1898 described the phagocytic mononuclear cells in the lymph nodes in typhoid. Aschoff and Kiyono now include these cells in their class of reticulo-endothelium with which are now identified the mononuclear cells of the blood stream. Finally, Sabin and Cunningham,[6] by supravital methods, have again rendered the term reticulo-endothelium meaningless and conclude that the endothelial leukocyte of Mallory, the histiocyte of Aschoff and Kiyono, the macrophage of Evans and the clasmatocyte of Sabin are identical but differ in origin from the monocyte of Sabin and Cunningham derived from the reticular or mesenchymal cell, whose primitive stem-cell is also the parent cell from which the leukocytic and lymphocytic series of cells are derived. In a consideration of absorption, especially of particulate matter, the origin and destination of the cells concerned become very pertinent, and its importance in the absorption of certain crystalloids and colloids must not be casually dispensed with, especially since it is generally accepted that these must also pass through cellular protoplasm to enter the blood or lymph vascular systems for final disposition. It has been difficult even to trace accurately the course of liquid suspensions of particulate matter far beyond the site of primary injection, but a review of a few recent studies will serve to elucidate this from the standpoint of our present knowledge of the lung and pleura.

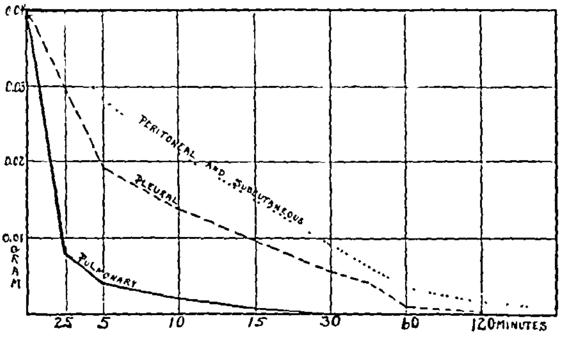

Fig. 1.—Absorption of 2 cc. of 2 per cent sodium sulphocyanate solution after intrapulmonary, intrapleural, intraperitoneal and subcutaneous injection into normal guinea-pigs. The pulmonary rate of absorption exceeds the pleural, and the latter exceeds that from the peritoneal cavity or subcutaneous tissues.

Karsner and Swanbeck,[7] in studies on cats with carmine and carbon suspensions, found that particulate matter in the pleura is taken up by endothelial cells in situ, and is transported in endothelial cells rather than as free pigment. The surface cells that participate are determined by the position of the pigment; but, other things being equal, the parietal pleura appears to be somewhat more active than the visceral pleura. The surface endothelium after phagocytosis may migrate to the underlying lymphatics, and the cells in the sinuses of lymph nodes are largely migratory cells. The phagocytic power of the cells is a primitive function existing after the death of the animal as well as during a period of spinal shock. Drainage from the parietal pleura is chiefly into mediastinal lymph nodes, whereas that from the visceral pleura is principally into the lymph nodes at the hilum of the lung. Transport from the visceral pleura is in part through the subpleural and in part through the peribronchial and perivascular lymphatics. Occasional transfer of pigment to the abdominal lymphatic apparatus was noted, but this was by no means either constant or frequent.

Lyter,[8] in experimental studies on guinea-pigs, rabbits and sheep, wished to determine the probability of particulate material (india ink) passing from the mediastinum into the substance of the lungs and the probability of its passing from the pleural surface into the lung, without concern with the question of the pathways. India ink injected into the mediastinum passed into the lung substance and into the spaces beneath the parietal pleura, while india ink injected into the right pleural cavity also passed into the lung substance on both sides as well as into the tissues of the mediastinum and beneath the parietal pleura on each side. No pigment was found beneath the diaphragmatic pleura or in the liver or spleen.

Bettman,[9] working with dogs and rabbits, found that india ink injected into a normal pleural space left an unstained visceral and parietal pleura, while the intracostal and superdiaphragmatic lymph channels were deeply pigmented, and the mediastinal and hilum glands contained large amounts of carbon. In rabbits injected with air and india ink there was a striking difference in that the carbon remained as a thin film on both the parietal and visceral pleurae, and the lymph channels and nodes were less injected.

In order to learn something of the modus operandi of the removal of an exudate from the pleural cavities, Wadsworth[10] performed experiments on dogs, cats and rabbits. India ink, milk and carmine in Ringer's solution were injected into the pleural cavity and could be traced in the parietal pleura and to a less extent in the visceral pleura, both in the living anesthetized animal and in the dead animal in which artificial respiration had been maintained for some time (from one to two hours). It is concluded by him that particulate material finds easy access to the lymphatics of the parietal pleura, and not by phagocytosis. The lymphatics of the visceral pleura were not so markedly filled as those of the parietal pleura, and here and there phagocytosis was observed. The fact that the substernal and hilum glands contained pigment even in the dead animals on which artificial respiration had been performed is presented as conclusive evidence that respiratory movements alone can act as an adequate pump for these lymphatics.

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4. The terms crystalloid and colloid are used with reservation and the knowledge that when substances are introduced into the body they enter a complex physicochemical colloid system in which their true state may be altered either by physical or by chemical combination, and that, as Fischer (Handbook of Colloid Chemistry, 1915) states, "all substances can appear as colloids under appropriate conditions."

5. Mallory, F. B.: Histological Study of Typhoid Fever, J. Exper. Med. **3**: 611, 1898.

6. [illegible] The Physiology of the Endothelial Cell, [illegible] Under Normal and Pathological Conditions, [illegible] Aug.) 1924.

7. [illegible] Swanbeck, C. E.: The Removal of Particulate Matter from the Pleura, J. M. Res. **42**: 91 (July-Sept.) 1920.

8. Lyter, J. C.: The Pathways of the Mediastinum, the Lungs and the Pleurae, Am. J. M. Sc. **168**: 882 (Dec.) 1924.

9. Bettman, R. B.: The Reaction of the Pleura to Particulate Matter, Especially in the Presence of Pneumothorax, Arch. Surg. **10**: 523 (Jan., pt. 2) 1925.

10. Wadsworth, T. W.: A Mechanism Maintaining the Negative Pressure of the Pleura and Influencing Absorption, J. Path. & Bacteriol. **25**: 266 (April) 1922.

The disposition of particulate matter in the lung follows definite routes into the lymphatics converging to the hilum, which have been exhaustively worked out by Klotz, Haythorn and others in conjunction with studies on anthracosis, and hardly bear repetition here, as they are common knowledge and the literature has already been summarized.[11]

It may seem a far step between the route of absorption of particulate substances and that of crystalloid and colloid solutions, and yet opinion is still divided as to how far absorption of the latter solution is primarily along lymphatic or blood vascular channels. In concurrence with the views of Starling and Tubby (1894), Heidenhain (Orlow, 1895) and Mendel (1898), Dandy and Rowntree[12] in 1914 concluded that absorption of fluids was primarily into the blood and not into the lymphatics. They studied the absorption of fluids (isotonic salt solution containing phenolsulphonphthalein) from the normal peritoneal and pleural cavities in dogs, and conclude that there is a very active absorption of fluids from all parts of the normal peritoneal and pleural cavities, which is essentially hemic and not lymphatic. Peritoneal absorption is practically equal in all postures except pelvis down, in which it is 15 per cent less than other postures; likewise, pleural absorption is 13 per cent less in pelvis down than in other postures.

Although not concerned with absorption from the lower respiratory tract but rather with absorption in the body in general, Putnam[13] devised an ingenious experiment, using the peritoneum of rabbits, cats and dogs in the living intact animal, and he repeatedly thus dialyzed flowing blood against indifferent fluids. Dialysates thus obtained varied according to the fluid employed; but, in general, they contained a trace of protein matter and crystalloids occurring naturally in the blood plasma or artificially introduced into the circulation.

Under certain conditions, fluids in the peritoneal cavity can come into an apparently complete osmotic equilibrium with the blood plasma. The speed of diffusion of different molecules varies inversely with their respective sizes. Colloids in general are not transmitted from the blood stream into fluids in the peritoneal cavity. Colloids in solution are, however, absorbed from the peritoneal sac, although not as rapidly as crystalloids. Changes in volume of hypotonic and hypertonic solutions occur in the direction that might be predicted from a consideration of osmotic forces at work, but never to exactly the extent demanded by the theoretical laws of pure osmosis. Absorption into the blood stream is always greater than the expected diffusion from the peritoneal cavity, and sometimes very much greater.

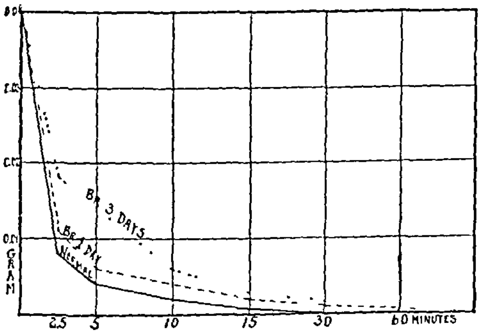

Fig. 2.—Retardation of the absorption of 2 cc. of 2 per cent sodium sulphocyanate solution in the lungs, one and three days after gassing with bromine that resulted in an acute pneumonitis.

It is concluded that while the major part of the transfer of crystalloids to and from the peritoneal cavity may be explained as being due to a simple colloidal membrane, the presence of another pathway, capable of transmitting colloids and particles as well as true solutions, and oriented only away from the peritoneal sac, must be predicated. Whether this second mode of transmission is due to some form of "vital activity" (phagocytosis, potocytosis) or whether it is due to simple mechanical filtration through intercellular spaces, actual or potential, of appropriate size, is still obscure.

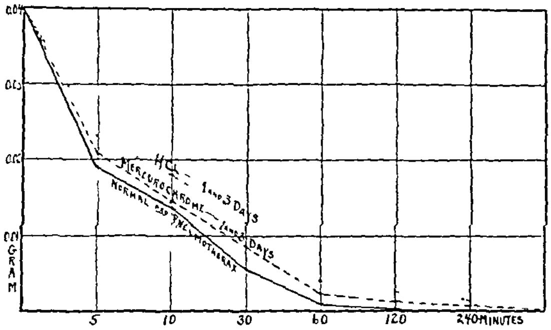

Fig. 3.—Retardation of the absorption of 2 cc. of 2 per cent sodium sulphocyanate solution in acute pleuritis. The inflammatory reaction was greater after 2 cc. of 0.2 per cent hydrochloric acid solution than after 2 cc. of 0.2 per cent mercurochrome solution. In pneumothorax, no retardation was apparent as compared to normal.

The exclusive hemic route of absorption of crystalloids and lymphogenous route of colloids is chosen by two recent investigators. Katsura[14] studied the absorption of aniline dyes in the normal peritoneal and pleural cavities of rabbits and dogs, and concludes that crystalloid dyes are, even in powder form, rapidly resorbed by the blood stream, dependent on the amount introduced. Colloidal dyes are resorbed much less rapidly and by the lymph stream. The lymph vessels of the peritoneum are not exclusively emptied into the thoracic duct but partly into the right lymphatic duct. The lymph paths of the right pleura are not to the right lymphatic duct but, like that of the peritoneum and left pleura, mainly to the thoracic duct. In addition to absorption of crystalloids and colloids under normal conditions in the peritoneum and pleura of dogs, less so in rabbits, guinea-pigs and white rats, Notkin[15] also studied absorption from those serous surfaces under experimental pathologic conditions. He found that crystalloid salt solutions are primarily absorbed by the blood vessels, and believes that the lymph vessels may take some part in this. The absorption in the living animal is dependent on physicochemical factors (diffusion, osmosis, etc.), but vital factors play a part in that these substances act as a foreign substance and cause a reaction which is absent in dead tissues. Hemoglobin injected into the blood stream appeared in the urine in twenty-seven minutes; injected into the serous cavities

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[11] Corper, H. J.: Pulmonary [illegible] of Particulate Matter, Normally and During Anesthesia, J. A[illegible] 17) 1922.

[12] Dandy, W. E., and Rowntree [illegible] d Pleural Absorption, with Reference to Postur[illegible] **59**: 587, 1914.

[13] Putnam, T. J.: The Living Peritoneum as a Dialyzing Membrane, Am. J. Physiol. **63**: 548 (Feb.) 1923.

[14] Katsura, Shigehiro: Die Resorption der Farbstofflösungen aus der Bauch- und Pleurahöhle, mit besonderer Berücksichtigung des Ductus lymphaticus dexter, Tohoku J. Exper. Med. **5**: 294, 1924.

[15] Notkin, J. A.: Die Aufsaugung in den serösen Höhlen (Die Bedeutung der Lymphgefässe), Virchows Arch. f. path. Anat. **255**: 471, 1925.

(peritoneum or pleura), they appeared in three hours forty-six minutes, and, injected into inflamed (by iodine potassium iodide solution) serous cavities, appeared in eight hours twenty-five minutes. It is concluded that the lymph vessels play an especially important rôle in the economy of the living animal since it is only through these vessels that the tissue fluids, like lymph, transudates and exudates are resorbed.

Aside from the early partially inexact studies by Grober[16] in 1901, from which he maintained that resorption from the pleura occurred by diffusion and osmosis as well as by respiratory movements (pumping system of the intercostal lymph vessels, pressure of the lung against the thoracic wall and the movement of the pleural surfaces against each other), and that resorption from the inflamed pleura is diminished, and a recent review of the literature with inconclusive personal experiments with many substances including various crystalloids, fats and lipoids, proteins, epinephrine, etc., in guinea-pigs by Jedlička[17] in 1924, there is just one other of recent date that is of value in a consideration of the absorption of liquids from the lower respiratory tract. This study was initiated by Winternitz and Smith[18] in the hope of utilizing the intratracheal route for the more direct application of therapeutic agents in pulmonary inflammatory conditions. While the main objective was not attained, it was found that the lungs would tolerate great quantities of fluid without untoward effects, and they were also led to challenge the significance of pulmonary edema as a cause of death. All the experimental work was done on normal dogs, and the material was introduced into the lungs by tracheal insufflation. It was found that 20 cc. per kilogram of body weight (from 200 to 450 cc. total volume) could be introduced into the lungs without evident harmful effect, and 30 cc. per kilogram merely overflowed back through the trachea. The fluid introduced found its way into the alveoli. Absorption from the lung was determined by noting the phenolsulphonphthalein excretion in the urine. After intravenous injection, the urine was positive in five minutes; after intrapulmonary, in thirteen minutes, and after intramuscular, in fifteen minutes. The absorption of 20 cc. of salt solution per kilogram of body weight from the lungs requires a considerable period of time. After eighteen hours much has disappeared, and within four days it has been absorbed without a trace. In the interim, however, and for several hours after insufflation, a degree of artificial edema is encountered which is greater than that when death is ascribed to this condition.

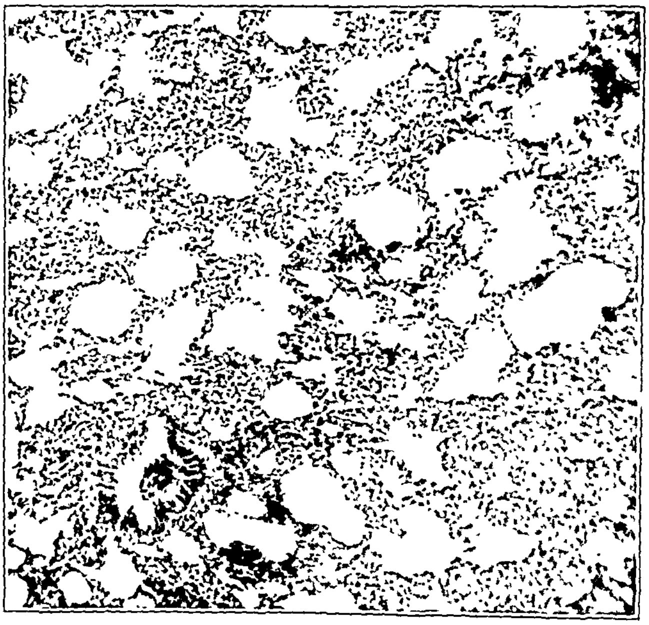

Fig 4.—Pneumonitis three days after bromine gassing resulting in retardation of absorption (compare fig 2)

Although Winternitz and Smith abandoned the possibility of washing out the lungs in acute inflammatory conditions in these organs on account of the danger of dissemination of infection and aggravation of the disease, it seemed advisable to obtain further information on the localization and absorption of liquids from the lower respiratory tract under different conditions so that this information might be further applied as a warning against dangerous procedures or might open the possibility of rational diagnostic or therapeutic methods. Earlier reports from the laboratory of the National Jewish Hospital have been concerned mainly with the pulmonary localization of particles suspended in the inspired air, or with aspirated and injected liquids containing particulate material.[19] The study to be reported below is concerned with the problem of the absorption of liquids from the lungs and pleura under normal and pathologic conditions. This problem has been touched on only saliently or indirectly by previous investigators. Initially it was hoped that aniline dyes might be utilized as an index of absorption, and as a preliminary step a number of crystalloid and colloid dyes, obviously of intense color, were tested by intracutaneous injection into guinea-pigs to determine the concentration tolerated by the tissues without visible injury and the rate of absorption from the local site. Of those tested, brilliant cresyl blue, neutral red, cresyl echt violet, scarlet M 00 and Victoria blue produced local ulcers in concentrations down to 0.5 per cent, while azorubin and rose bengal produced ulcers in 1 per cent and transient tissue changes in 0.5 per cent. Trypan blue and trypan red (both colloidal) produced a transient edema in 2 per cent concentration, but was without effect on the tissues in 1 per cent. The local color with both these dyes persisted as long as the twenty-fifth day, and by intraperitoneal injection 4 cc. of 1 per cent trypan blue colored a guinea-pig blue for twenty days.

Alkali blue produced a transient edema in 2 per cent solution, but was without detrimental effect on the tissues in 1 per cent, and the color persisted locally for more than one month. Vital red produced no appreciable tissue changes in 2 per cent, but its color would not permit satisfactory reading in the body. Indigo carmine and acid fuchsin, both crystalloid dyes, produced no appreciable tissue changes in 2 per cent concentration, rapidly faded within a few hours (to absence within twelve hours) and disappeared from the site of injection. The red color of acid fuchsin made it unserviceable for immediate identification in the body, even though satisfactory otherwise.

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[16] Grober, J. A.: Die Resorptionskraft der Pleura, Beitr. z. path. Anat. **30**: 267, 1901.

[17] Jedlička, Jaroslav: Experimentální prispevek k poznání absorpeni schopnosti dutiny pleurální, Cas. lek. cesk. **63**: 1281 (Aug. 30), 1319 (Sept. 6), 1345 (Sept. 13), 1386 (Sept. 20) 1924.

[18] Winternitz, M. C., and Smith, G. H.: Intratracheal Pulmonary Irrigation: Contributions to Medical and Biological Research, Osler Memorial Volume **2**: 1255, 1919.

[19] Corper, H. J., and Robin, H. A.: The Pulmonary Aspiration of Particulate Matter, Am. Rev. Tuberc. **6**: 813 (Nov.) 1922. Corper, H. J., and Freed, Harold: The Intratracheal Injection of Oils for Diagnostic and Therapeutic Purposes, J. A. M. A. **79**: 1739 (Nov. 18) 1922. Corper, H. J.: The Pulmonary Aspiration of Particulate Matter and Pulmonary Tuberculosis Produced Experimentally by Aspiration, Am. Rev. Tuberc. **8**: 386 (Dec.) 1923.

These preliminary tests made it obvious that only one dye—indigo carmine—would prove at all satisfactory for absorption tests if color, tissue tolerance and ready absorption were considered of importance. All white guinea-pigs were used, and the appearance of the blue color as determined by the bluing of the skin was used as an index to absorption from the lungs, pleura, peritoneum and subcutaneous tissues after the injection of a constant amount and concentration of the dye (indigo carmine) solution (2 cc., 2 per cent). An inconsistency arose, however, in the fact that the rate of absorption as determined by the appearance of the blue skin color regardless of the site of injection into the subcutaneous tissues was much more rapid than after intratracheal, intrapleural or intraperitoneal injection, although the pulmonary rate exceeded the pleural, and the latter the peritoneal.

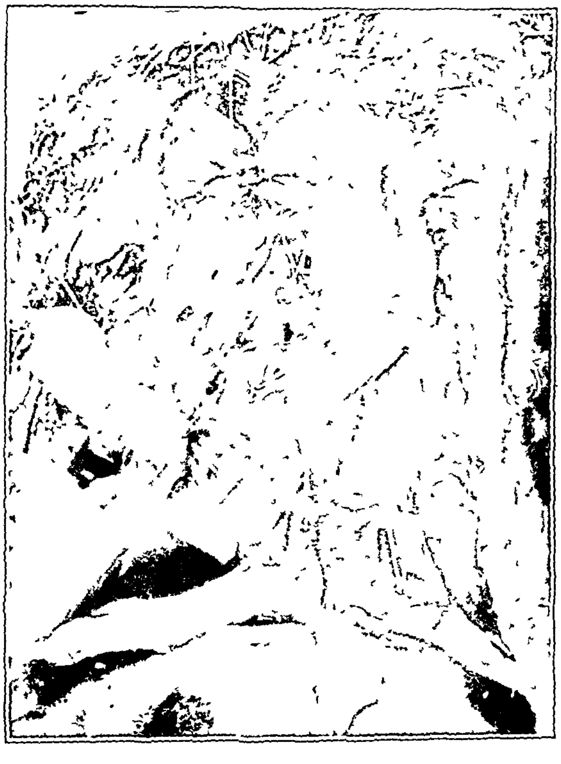

Fig 5.—Fibrinous pleurisy with effusion in pleuritis three days after the intrapleural injection of hydrochloric acid (0.2 per cent) *resulting in retardation of absorption* (compare fig 3)

Attempts to remedy the discrepancies by quantitative determinations of the dye in the blood serum at different intervals also proved insufficiently accurate. It was finally decided that the only accurate method of gaging the rate of absorption from a certain portion of the body would be to examine the site of injection itself and at regular intervals after injection. All attempts to work up a quantitative chemical method for determining the amounts of indigo carmine contained in tissues after injection proved unavailing, and dyes were discarded in preference to sodium sulphocyanate, which in intracutaneous tests proved to be without perceptible injurious effect on tissues in concentration as high as 2 per cent. The method of analysis briefly consisted of grinding the tissues (lung, etc.) in a mortar with sand, adding 30 cc. of 10 per cent trichloracetic acid solution, allowing the mixture to stand until the supernatant liquid is clear, and then filtering. The residue is washed several times and the entire combined filtrates diluted to 200 cc., and to 50 cc. there is added 0.7 cc. of 10 per cent ferric chloride solution and the color is compared with a standard in a colorimeter. In the case of pleural or peritoneal fluids, the spaces are washed out well with 100 cubic centimeters of water, and 30 cc. of 10 per cent trichloracetic acid is added and the procedure is continued as with lung. Since the rate of absorption of any foreign substance or fluid in the body or of extravasated pathologic fluids must be dependent on a number of factors, such as the volume, the concentration and the state and condition of the tissues in which absorption is taking place, it is advisable in experimental studies to unify and control as many of these factors as possible. This was done by using in all the studies reported here 2 cc. of 2 per cent sterile sodium sulphocyanate solution. Since absorption from various parts of the body is to a great extent relative and dependent on numerous variable factors, absorption from the lower respiratory tract was compared with that from the peritoneum and subcutaneous tissues. As previous observers uniformly found absorption not to vary appreciably from different locations and of different substances (crystalloids or colloids) in different species, the guinea-pig was chosen for this study.

The rate of absorption of 2 cc. of 2 per cent sodium sulphocyanate solution from the lungs (after intratracheal injection with the animal in the head-up position), pleura, peritoneum and subcutaneous tissues was determined by analyzing guinea-pigs at various intervals after injection, with the results graphically shown in figure 1.

An examination of figure 1 reveals that the absorption of 2 cc. of 2 per cent sodium sulphocyanate solution from the lungs after intratracheal injection exceeds that from the normal pleural, peritoneum or subcutaneous tissues. How far the absorption from the lungs is responsible for the more rapid rate of absorption from the pleura over that of the peritoneum and subcutaneous tissues was not determined, although this, combined with the motility of the chest, may offer a possible explanation.

In order to determine the effect of acute inflammatory conditions in the lungs and pleura on absorption, a series of guinea-pigs was given injections of 2 cc. of 0.2 per cent hydrochloric acid and 2 cc. of 0.2 per cent mercurochrome-200 soluble [20] into the right pleura, and another series was given inhalations of bromine gas. The intrapleural injections of hydrochloric acid and mercurochrome were determined on in preliminary tests as being capable of producing a decided acute pleuritis without endangering the immediate life of the animal; nine of ten animals thus treated would easily survive for more than two weeks. The bromine exposures were given in a chamber about 2 by 2 by 3 feet in which from six to eight guinea-pigs were placed for hix hours and exposed to the vapors from 0.25 cc. of liquid bromine introduced at hourly intervals. This produced a variable acute pneumonitis from which the animals would gradually recover. An occasional guinea-pig would die shortly after exposure, but the majority of those surviving for one day would show no further general life endangering consequential effects. Bromine inhalations were used in preference to the intratracheal injection of liquids on account of its uniform effect on the lung in distinction to the irregular distribution of the changes occurring after the introduction of irritating liquids. The results of the absorption tests with 2 cc. of 2 per cent sodium sulphocyanate solution one and three days after the intrapleural injection of hydrochloric acid and mercurochrome, and bromine gassing are recorded in figures 2 and 3. For convenience of comparison, the normal curves of absorption for the lung and pleura are included in the charts.

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[20] Corper, H J.: Pathologic Changes in Lung from Use of Mercurochrome 220 Soluble, J. A. M. A **85**: 256 (July 25) 1925.

An examination of figures 2 and 3 reveals a decided retardation of the absorption of the sodium sulphocyanate in acute inflammatory conditions of the pleura produced by hydrochloric acid and mercurochrome, and of the lungs produced by bromine gassing one and three days prior to the absorption tests.

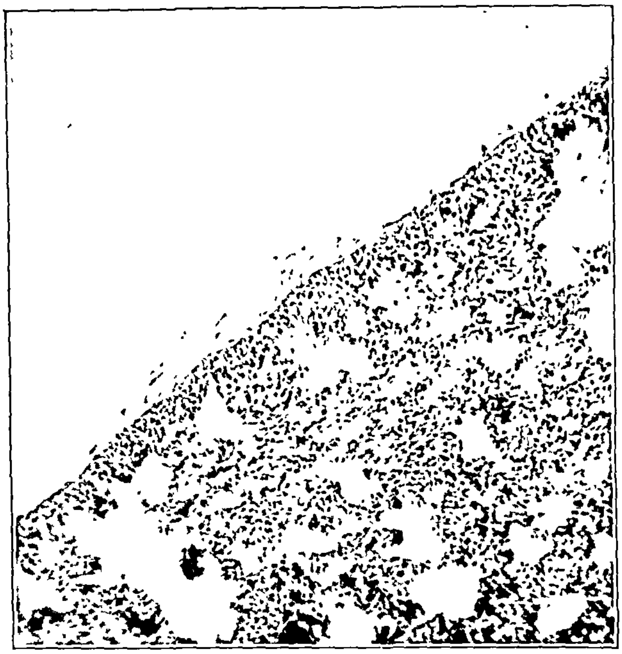

Fig. 6.—Lung with fibrin deposits and pleuritis (same as figure 5).

In order to note just how far this retardation of absorption from the pleura is due to the inflammatory condition itself or due to a separation of the pleural surfaces as a result of the extravasated fluid, the absorption of sodium sulphocyanate was tested shortly (from five to ten minutes) after the institution of artificial pneumothorax by right intrapleural injection of from 15 to 20 cc. of air, which produced a good compresssion. In the guinea-pig, this amount of air produced a bilateral pneumothorax. The pleurisy produced by hydrochloric acid and mercurochrome were also bilateral, so that the studies may be considered to cover the entire pleura of both sides of the chest instead of being monolateral as might be assumed from the injection into the right side of the chest. The graph of absorption of 2 cc. of 2 per cent sodium sulphocyanate solution from the pleura, as illustrated by the time and amount recovered, shows no appreciable change from the absorption noted from the normal pleura. This is illustrated in figure 3, the same absorption curve sufficing for the normal and pneumothorax animals.

It would seem from this study that resorption from the pleura primarily is dependent not on physical changes in the chest, such as occur in artificial pneumothorax, but rather on the grade and amount of inflammatory changes in the pleura. It is to be noted that the retardation of absorption in the hydrochloric acid pleuritis, which was of more severe grade, is greater than that in the mercurochrome pleuritis.[21]

SUMMARY AND CONCLUSIONS

The general problem of the absorption of liquids as applied to the medical sciences is intimately associated with the biology of the body cell, since all fluids and particulate substances passing into or out of the human economy or from one tissue to another do so through the medium of the cell; the existence of stomas as once maintained by von Recklinghausen being now denied. That the laws of osmosis and diffusion play an important part in absorption and resorption of liquids is in accord with present day conceptions, but there are certain unexplained "vital" factors concerned which require further elucidation. That phagocytosis is of primary significance in the absorption and transportation of particulate substances seems well established, but opinions are still divided, and justly so, as to the relative significance of the blood and lymph vascular systems in the absorption of crystalloid and colloidal substances. It seems well at present with the available scientific evidence to consider that both systems play a part in the absorption of both crystalloids and colloids, though the predominant part played in this may depend entirely on the individual circumstances in each case. Probably with most simple molecular crystalloids the main route of absorption is hemic, while with simple colloids it is along lymphatic channels. The difficulty in ascribing to either a specific absorptive function lies in our lack of knowledge of the physicochemical changes wrought in a substance passing through the tissue cells.

Absorption and resorption of liquids from the lower respiratory tract, the lungs and the pleura follow the main principles of absorption in other parts of the human economy, but the anatomic structure and physiologic function lend to these tissues differences that are still to be determined. The rapidity of absorption of crystalloids from the lungs and pleura exceeds that from the peritoneum and subcutaneous tissues. Absorption of crystalloids is more rapid from the lungs than from the pleura, and it is possible that absorption from the lungs in part accounts for the rapidity of absorption from the pleura. The rapidity of absorption of liquids from the lungs is probably to a great extent accounted for by the vascularity and large total surface of the terminal respiratory divisions, the alveoli.

The absorption of crystalloids by the pleura is not influenced by artificial pneumothorax instituted shortly before and resulting in a decided collapse of the lungs. Acute inflammatory conditions affecting the pleura, produced by chemical means (hydrochloric acid and mercurochrome), retard the absorption of crystalloids from the pleura. Acute inflammatory conditions affecting the pulmonary parenchyma, produced by gassing with bromine, retard the absorption of crystalloids from the lung after intratracheal injection. In the application of procedures to the lungs and pleura for diagnostic and therapeutic purposes, these facts must be borne in mind.

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[21] Drs. Max B. Lurie and Nao Uyei cooperated in the technical phases of this study.

THE RESULTS OF DIATHERMY IN PELVIC INFECTIONS *

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The favorable results reported by Corbus, from the use of diathermy in the treatment of gonorrheal urethritis and endocervicitis, encouraged me to investigate its feasibility as a therapeutic agent in intrapelvic infections of the female. If satisfactory results could be obtained in urethritis and endocervicitis, it seemed logical to expect that it might prove equally efficient in adnexal disease of gonorrheal origin.

The principle on which the germicidal influence of diathermy depends in gonococcal infections is the generation of heat in the tissues, sufficient to destroy the vitality of the bacteria. It is a well known fact that the gonococcus dies after an exposure for ten minutes to 42 C., and whatever success diathermy has achieved in the treatment of this type of infection is due to this biologic alteration.

It may be said, by way of explanation, that diathermy is the application to the body of an electrical high frequency current that generates heat in the tissues between two electrodes. The degree of heat is controlled by the size of the electrodes, the amount of current utilized, the duration of the application, and the density of the tissues treated. The greater the density of the tissues traversed by the current, the greater the amount of heat developed. The resistance of tissues varies, according to their density, in the following order: bone, cartilage, ligaments, fascia, skin, muscle and fat. These are important factors when applications of diathermy are made, especially when higher degrees of heat are desired than those used in gonorrheal infections.

The depth of heat penetration can readily be regulated by varying the size of the electrode (fig. 1). When two electrodes of equal size are used, the maximum temperature will be equidistant from them; when electrodes of different sizes are applied, the greatest degree of heat will be near the smaller one. It is therefore possible to localize any degree of heat at any depth by observing these principles. The amount of heat the normal tissues will tolerate before destruction or coagulation occurs probably varies between 55 C. and 58 C. I have applied diathermy through the abdomen of a dog, heating the bladder and rectum to 52 C., without the production of histopathologic changes. I have also applied 55 C. to the human cervix for ten minutes without any gross tissue changes following. We know definitely that tissue is destroyed at 60 C.

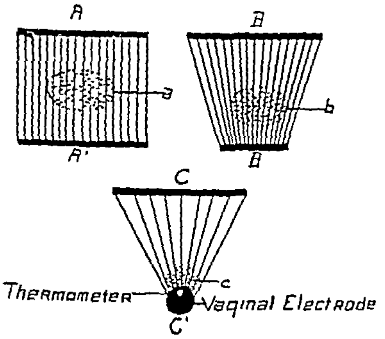

Fig. 1.—Maximum degree of heat with different size electrodes: *AA'*, two electrodes of similar size; *a*, location of maximum degree of heat midway between the two electrodes; *BB'*, electrodes of unequal size; *b*, maximum degree of heat nearer the smaller electrode; *C*, surface electrode; *C'*, vaginal electrode with the thermometer opening; *c*, location of greatest degree of heat.

Medical diathermy is a term applied when the tissues are heated within the boundaries of tissue toleration. Its effect is to produce a hyperemia that quickens the circulation so that the inflamed area treated receives more blood through the dilated capillaries. This brings about a reduction of the stasis in the engorged blood vessels and relief of pain from pressure on the nerve filaments. There also occurs a more rapid absorption of the exudate, for by the increased flow of blood to the pathologic site, a mobilization of the body's natural defenses takes place.

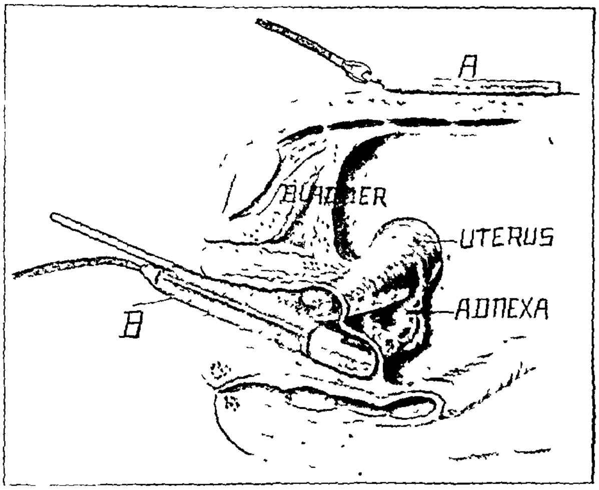

Fig 2.—Abdominovaginal application of electrodes: *A*, abdominal water cooled electrode. *B*, vaginal electrode, with the thermometer inserted, registering the temperature of the vaginal vault. The temperature of the adnexa is from 2 to 3 degrees C. greater than the vaginal temperature

Surgical diathermy, or electrocoagulation, refers to the destruction of tissue by the utilization of degrees of heat above 58 C. This can be attained with any type of electrode, but the employment of one large and one small electrode is the usual method. By means of this therapy new growths or inflamed structures can be destroyed.

In the investigation of the therapeutic application of diathermy to intrapelvic infections, preliminary experimental work on the cadaver was done to ascertain where the maximum degree of heat would register with different types of electrodes.

Since the inflamed adnexa usually prolapse in the culdesac of Douglas, it seemed desirable to ascertain whether the maximum heat units could be concentrated in this area. Without relating the details of the experimental work, I may say that it was found that, with an abdominal electrode measuring 18 by 12.5 cm., and a vaginal electrode (the exposed active surface measuring 5 by 3 cm.), this region was readily heated to 46 C., while the vaginal temperature registered 44 C. A special electrode was made through which a hole was drilled near its surface to hold a thermometer, the bulb being exposed through a small window at the distal end. This allowed the bulb to come in contact with the vaginal vault (fig. 2). Through this contrivance, by adding 2 C. to the temperature registered in the vaginal tissues, the approximate degree of heat in the adnexa was estimated. This can only be approximate, because the amount of heat radiation by the circulating blood cannot be determined.

The question also naturally arose: What effect would prolonged maintenance of heat have on large pyosalpinges or tubo-ovarian abcesses? Electrotherapeutists and authorities on physiotherapy have stated that diathermy should never be used in cavities containing pus, in which no outlet was present for drainage, and have particularly cautioned against its use in the pelvic pathologic processes mentioned. In spite of these opinions, it seemed reasonable to assume that, if the gonococcus was the inciting factor producing such pelvic lesions, and that if a penetration of the diseased structure by heat to 42 C. could be attained, the causal agent would be destroyed, with an incidental reduction of the inflammation. Furthermore, the active hyperemia produced should aid in the rapid absorption of the products of infection and should promote resolution.

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* From the Gynecological Division, Harlem Hospital.

* Read before the Section of Obstetrics and Gynecology, New York Academy of Medicine, Feb. 2, 1926.

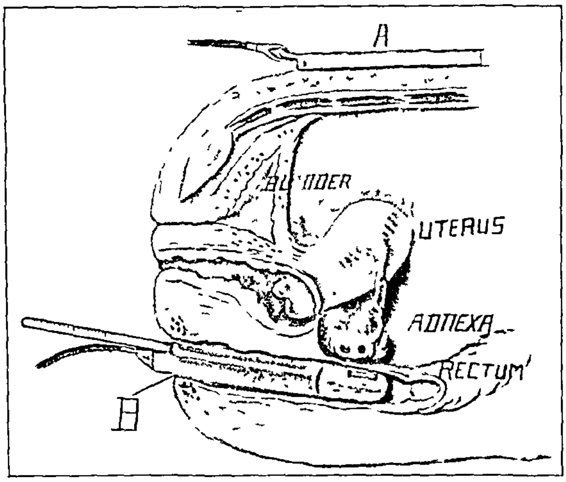

Fig. 3—Abdominorectal application: *A*, abdominal water cooled electrode; *B*, rectal electrode with thermometer This method of application probably is the best for therapeutic purposes, but not so comfortable to the patient

Acting on this assumption, 100 patients with adnexal disease were treated at the Harlem Hospital with diathermy. In all the patients the gonococcus was a causal factor of the disability. This was ascertained by positive urethral or cervical smears in most instances. In others whose smears were negative but contained numerous pus cells, it was assumed to be so, because there was a concomitant subacute or chronic urethritis, endocervicitis, skenitis or bartholinitis. The chief complaint on admission was abdominopelvic pain. This was due to either an initial adnexal infection or an acute exacerbation of a chronic inflammation. All patients had an accompanying endocervicitis; some had urethritis, Skene's duct involvement, or bartholinitis which, in my opinion, classed them as gonorrheal primarily.

The degree of pelvic involvement varied from small, thickened, tender adnexa to large pus tubes or tubo-ovarian abscesses that entirely filled the pelvis. In some instances the masses extended above the pelvic brim.

Table 1.—*Data of Adnexal Disease in One Hundred Patients*

Patients having adnexal disease without masses..........	23
Patients having adnexal disease with masses..............	77
Total number of cases................................	100

There were seventy-seven patients who presented pelvic or abdominopelvic masses; there were twenty-three patients without masses, but whose adnexa were thickened and tender.

Irrespective of the severity of the infection and the degree of pelvic pathologic change, diathermy treatments were instituted as a routine in all cases. The bipolar current was used throughout the entire series. The methods of administration employed were the abdominovaginal, abdominorectal (fig. 3) and abdominosacral application (fig. 4) of electrodes. The abdominovaginal application was made 139 times, while the sacro-abdominal route was utilized sixty-two times. The abdominovaginal application seemed the most practicable. It was attended with less discomfort to the patient than the rectal route; furthermore, it required less time and current than the sacro-abdominal route to produce the desired pelvic temperature.

The abdominovaginal application consisted of an abdominal electrode placed above the pubes, in contact with the skin, and a vaginal electrode, through which a thermometer was inserted, with the exposed surface placed behind the cervix, in contact with the vaginal vault. Sufficient current was utilized to raise the vaginal temperature from 42 to 43 C. (1,500 to 2,500 milliamperes). It was estimated that the maximum temperature in the inflamed adnexa was from 44 to 45 C. The current was then stabilized, and the temperature was maintained from fifteen to thirty minutes. The treatments were repeated at from three to five day intervals. As all these patients had a coexisting endocervicitis, the cervix was also treated, either at the same sitting, or at another time, with diathermy administered by the Corbus thermophore. Patients who had an associated urethritis were treated in a similar manner. These treatments consisted in applying an abdominal surface electrode and inserting the thermophore into the cervix or urethra (figs. 5 and 6). The amount of current utilized varied from 500 to 1,000 milliamperes. In the endocervicitis group, forty-eight patients were treated. Among these, twenty-four were cured or markedly improved, and twenty-four showed no improvement at all. My personal observation is that the application of low degrees of heat (from 42 to 43 C.) to the cervical canal is efficacious only in acute or subacute inflammations of the endocervix, not in the

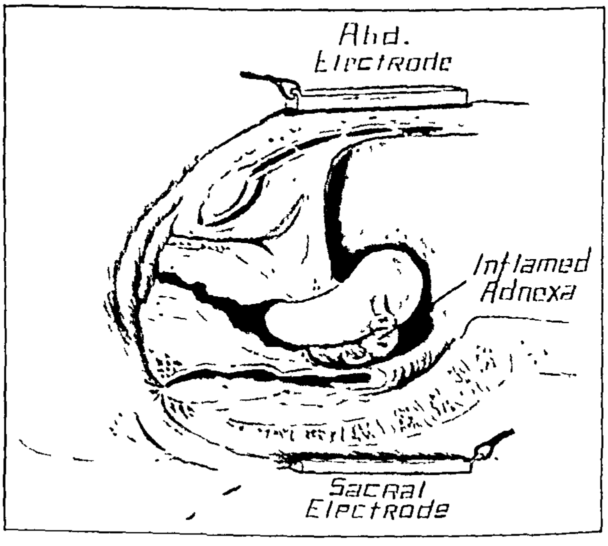

Fig. 4.—Application of abdominosacral electrodes This method requires more current and longer time in order to obtain the desired temperature in the adnexa.

chronic type. In the latter, it is preferable to destroy entirely the infected area by coagulation from the internal to the external os.

In the urethritis group, of thirteen patients treated, six were cured, six improved and one not improved. There were seven patients who received two or more diathermy treatments; of these five were cured, one improved and one not improved. This group, though too few in number for any definite conclusions to be drawn, at least causes one to believe that better results could be obtained by more frequent and longer applications of diathermy, as shown in the small subgroup of seven cases. I consider the clearing up of the lower genital tract infection important to prevent reinfection of the adnexa.

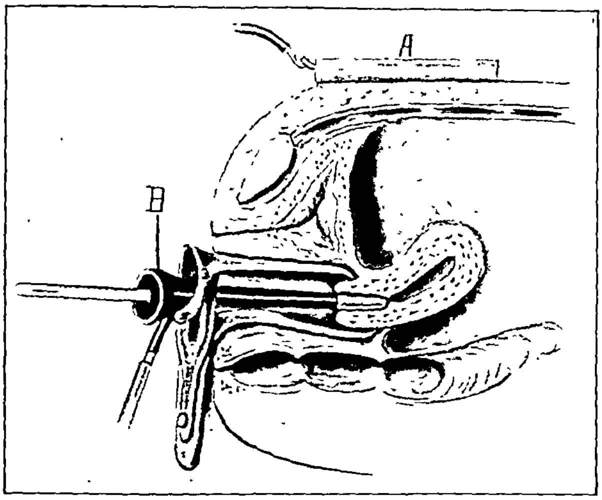

Fig. 5.—Application of diathermy in endocervicitis: *A*, abdominal water-cooled electrode; *B*, Corbus thermophore with thermometer registering the degree of heat in the electrode. The endocervical tissues register from 1 to 2 degrees C. higher than that indicated by the thermometer.

The most striking feature of the diathermy applications was the almost instant relief of pain in all cases. Among the seventy-seven patients who had pelvic masses, there was a disappearance of the masses in eighteen instances, and a reduction in the size of the masses in fourteen, making a total of thirty-two, or 41.5 per cent. The complete disappearance of the pelvic masses seemed more apt to occur in those having an initial attack of adnexal infection. While the tumefaction in chronic infections may be reduced in size, with rapid subsidence of the acute symptoms, the pelvic lesions remain as palpable structures, quiescent and innocuous. Such a result can be attained only by the prolonged use of diathermy. Of the seventy-seven patients having adnexal disease with masses, forty-nine were entirely relieved of symptoms, operation being unnecessary or refused by the patient.

Table 2.—*Data in Treatment of Patients with Adnexal Masses*

Patients with masses operated on	28
Patients with masses entirely relieved of symptoms; operation unnecessary or refused by patient	49
Total	77

On the twenty-eight patients whose adnexal masses persisted, following repeated diathermy applications, abdominal sections were performed. One cannot help but compare the operative findings in these patients with others of a similar nature who did not have preoperative diathermy. The pelvic structures appeared more hyperemic; they were soft, edematous and smooth; the adhesions were vascular and thin, not the thickened fibrous structures usually seen. Consequently, the masses were easily delivered with a minimum of trauma to important structures, and their rapid removal was facilitated. The contents of the masses consisted of a thin, watery, straw colored fluid, instead of the usual thick, creamy, purulent exudate. All cultures taken from the removed adnexa were negative.

The postoperative convalescence of this group was remarkably free from abdominal discomfort, pain, vomiting and distention. No doubt this was due to the lessening of operative trauma by the easy removal of the masses. Two wound infections occurred in the twenty-eight patients operated on, making 7.1 per cent, against 30 per cent wound infections in a large series that had no preoperative diathermy treatment.

I would like to emphasize that the results can be greatly improved in private practice and in institutions when more time can be allotted to each treatment. Many of these patients had only fifteen minute applications, while in private work thirty-five minutes is the minimum duration.

Regarding the uses of diathermy in pelvic infections produced by bacteria other than the gonococcus, my experience has been limited to three instances. In one postpartum case of three weeks' duration, with a pelvic mass of moderate size, one application of thirty minutes duration was made. Three hours later, severe abdominal pain with marked tenderness ensued, with a rise of temperature to 104, typical signs of acute pelvic peritonitis, and an abscess formation that necessitated posterior colpotomy. Another patient who had a severe postabortum pelvic infection and general peritonitis was given one diathermy treatment. This patient's condition was made worse, and she died shortly following the application. A third patient who had abdominopelvic masses of an obscure origin was given two diathermy treatments. The pain was increased in severity, and the masses increased in size. An abdominal section and pathologic examination revealed an actinomycosis of the abdominal parietal peritoneum. She made a good recovery.

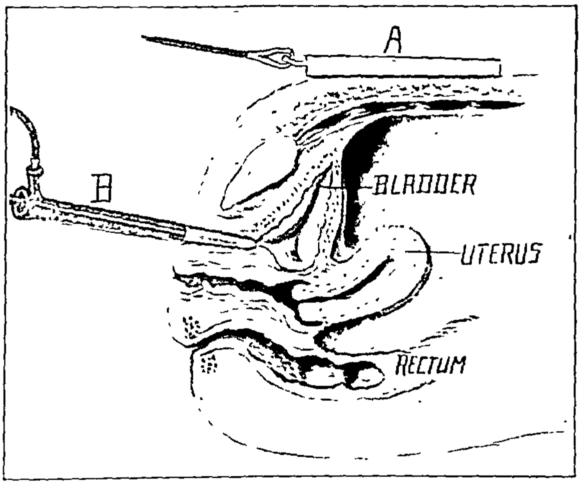

Fig. 6.—Application of Corbus thermophore, *B*, for gonorrheal urethritis; *A*, abdominal water-cooled electrode.

The specific bacteria responsible for most postpartum infections are the streptococcus, staphylococcus and the *colon bacillus. These bacteria require from 58 to 60 C.* of heat to render them inert. In view of the experiences I have described, I am led to conclude that when a much lower degree of heat is applied in the presence of such infections, not only does it fail to inhibit the pyogenic process, but also it produces a suitable cultural environment for the bacteria, and probably serves as a revivifying agent, which may incite an acute inflammatory process. It is true that these postpartum infections were acute in one case and subacute in the others. What the effect of diathermy would be in the chronic type of postpartum exudates is open to question.

CONCLUSION

I would venture to assert that diathermy is probably the most satisfactory available agent for the conservative treatment of pelvic infections due to the gonococcus. It relieves pain, diminishes the pelvic masses, and aids in complete resolution. Used as a preoperative therapeutic measure, it will eliminate many of the technical difficulties in the removal of large pelvic masses, and thereby contributes to a smoother convalescence. Incidentally, the percentage of postoperative wound infections is lessened.

580 Park Avenue.

ANKYLOSING OPERATIONS ON THE TUBERCULOUS SPINE

A STUDY OF FIFTY-THREE CASES*

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I have collected the histories of the patients with tuberculous spines who were operated on in the orthopedic clinic of Stanford University during the last twelve years, and to them I have added the histories of my private patients. A synopsis of the cases is given in the accompanying table.

The evaluation of any form of treatment is largely a personal matter. One who is content with an inspection of the outside of the body and never troubles to follow his cases to the mortuary and the laboratory can believe in the efficacy of any form of treatment. There are those who think that they can cure spinal tuberculosis by exposing their patients to sunlight. Twenty years ago, the same extravagant claims were made for the seashore of northern France as are made today for the sunlight in the mountains of Switzerland. My patients at the Sea Breeze Hospital at Coney Island, kept in the open air, were in excellent condition, but the course of their disease was not materially changed. Much the same may be said of the outdoor treatment carried out in any good climate. We are asked to believe that the sun's rays at a particular spot in Switzerland possess peculiar therapueutic virtue. I have never been able to detect any specific influence of California sunshine.

Until about twenty years ago the nonoperative treatment, by plaster of paris, by braces and by frames in recumbency, was practiced almost universally by those who treated many cases of spinal tuberculosis. No successful operation had ever been devised. Orthopedic surgeons stressed the value of these measures, and carried them out with meticulous care. Many of them follow the same course to this day. I was brought up in this school, and practiced the treatment for years. I worked in the clinics and hospitals of New York, enthusiastically at first, but with slowly lessening hopefulness, for about fifteen years. In all that time, watching other men's patients as well as my own hundreds of cases, I did not see as many cures as I have turned out in the fifty-three cases reported here. We would treat our patients for from two to five or more years, perhaps discharge them as cured, and then meet them in another clinic, or perhaps have them report back to us after a longer or shorter time, with a recrudescence of their disease. Such a thing as a cure without serious deformity was almost unknown. In spite of most painstaking care, we would be obliged to watch the development of an enormous hump. In the old days, we regarded Pott's disease in the adult as practically fatal. Occasionally, children recovered, but always with a large hump, which advertised the nature of their affliction to all throughout life. One seldom sees a typical "humpback" nowadays.

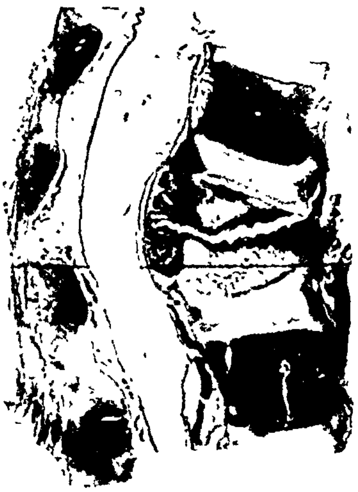

Fig. 1.—Stained slide of sagittal section of tuberculous lesion, comprising an epitome of spinal tuberculosis. Death occurred about six months after operation from intercurrent disease. The disease is in the stage of repair. The vertebra shows much calcification. The wedge shape, the bony bridge in the laminae, the trace of a cold abscess forming anteriorly, the tuberculous granuloma, under the posterior common ligament, bulging this out, and comprising the lumen of the spinal canal, may be noted. (Case of Dr. James T. Watkins.)

In spinal tuberculosis, as in other diseases, a choice of two methods is available in seeking a cure. By abstract reasoning one may evolve a theory, and then try it out on one's patients. This is pure empiricism, and is slow and uncertain. Its permanent good results in medicine can be counted on the fingers. Heliotherapy, drug treatment and external applications rest on this base. The other method is to accumulate facts, and then to attempt to reason from them to a cure. Let us apply this method to joint tuberculosis.

The cardinal symptoms and physical signs of joint tuberculosis are pain made worse by motion, muscular spasm, muscular atrophy, limitation of motion, and deformity in the sense of flexion contractures and subluxation. All these may be interpreted best as nature's effort to put the joint at rest. When we take the trouble to examine our specimens in the laboratory, we see the concrete evidences of this effort on nature's part. The tuberculous granulations in the bone marrow seem almost infallibly to seek the joint with a well defined purpose—to destroy it. The cartilage is perforated and killed; the granulation tissue unites with that from the other bone of the articulation and with that from the synovial membrane. The synovial membrane becomes thickened, and eventually little else but scar tissue. The joint becomes a mass of scar tissue, and as a working organ of motion is hopelessly injured. However, it is very rarely completely destroyed. Bony ankylosis is seldom if ever seen. Nature appears unable to form it in the absence of a secondary infection. Abscess formation, with secondary pus infection, is a frequent complication of joint tuberculosis. The joint then may be completely destroyed, but the risks of the disease are multiplied many times. The danger to life is great. The patient dies while nature is endeavoring to cure his disease. We note further that in the fibrous tissue in and about the joint, tuberculous foci may exist indefinitely, ready at any time to resume activity if they are set free, accidentally or with design.

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* Read before the surgical section of the San Francisco County Medical Society, Feb. 16, 1926.

We must throw out all the wild claims of wonder cures, and lay down our main rule of treatment, which is to deprive the joint of function.

How far shall we go in following this rule in the treatment of spinal tuberculosis? The nonoperative treatment is uncertain, takes years of time at best, and almost always is followed by marked deformity. Dissatisfaction with it, be it remembered, spurred orthopedic surgeons to devise something better, until Hibbs and Albee succeeded in ankylosing the spine. Hibbs got his idea from his observation of the fusing of the spinous processes in old specimens of spinal tuberculosis. In operating in such cases, one often notes this to a greater or less extent.

In the operative treatment, all the work is done on healthy bone, and at a considerable distance from the tuberculous portion. Hence, no danger of secondary infection exists. There remains, then, it seems to me, only the direct risk of the operation. This is very real without a skilled anesthetist. With one, it is almost negligible. We lost two patients on the table in our early work, the history of one of whom I have lost. We published the history of these two. Few other fatalities have been published, unfortunately. I have reason to believe that there have been many others.

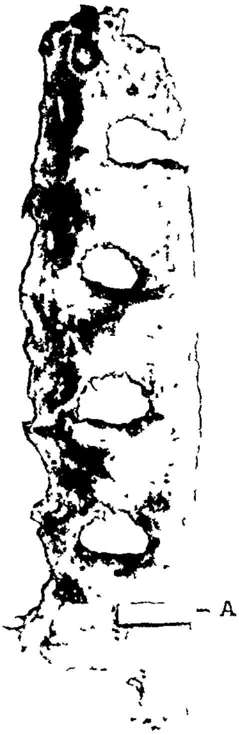

Fig 2 — Specimen showing result of Albee operation Patient died four years after operation, from hepatic cirrhosis Necropsy showed disease in stage of healing *A* section of graft and spinous process removed for study (Dr McChesney's case)

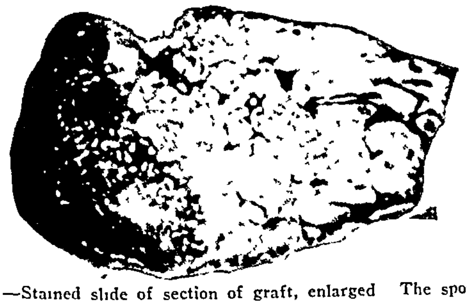

Fig. 3 —Stained slide of section of graft, enlarged The spongy bone is the spinous process

The patient should be anesthetized on his face in a comfortable attitude, with cushions arranged so that his breathing will be unimpeded. When the operation is finished, the patient is rolled carefully onto the ambulance, and remains flat on his back for about a week before his wound is dressed. He is kept in recumbency for six weeks, though he may lie on his side or on his face after the first week. After this, he wears a spinal brace for about six months. Theoretically, a brace is not necessary after the establishment of the bony bridge, but we never know when the bridge is strong enough to support the strain to which it is exposed.

We prefer the Hibbs operation to the Albee, though it is much more difficult to perform. Theoretically it is better, for the bony bridge, once formed, is permanent, while anything may happen to a graft, sooner or later. On the other hand, the Albee operation is excellent in an early case in which the disease seems to be localized in one or two vertebrae. It is quickly done. I fancy it for lumbar disease. The disadvantage of the Hibbs operation is the frequent failure to establish bony union between two or more of the vertebrae operated on. Our statistics show a heavy percentage of second operations. The presence of one or more places of nonunion can be told by the persistence of symptoms, though it may be inferred from the roentgenograms. It is annoying to be obliged to do a second operation, but we almost always find the false joint when we do it. No one should assume an air of superiority in this matter. I have done the second operation on other men's patients as well as on my own. In some cases the operation fails because it has not been carried high or low enough.

The Hibbs operation is a poor one to do before the class. It requires careful dissection. When we attempt to hurry, we get into trouble.

The results of these operations, as to the deformity, are good. Usually, with proper postoperative splinting, the increase of the deformity is checked. Once in a while it goes on slowly increasing for a number of years, but not to any great extent. This is usually in disease of the thoracic region, in which already existing deformity puts too great a strain on the new bone.

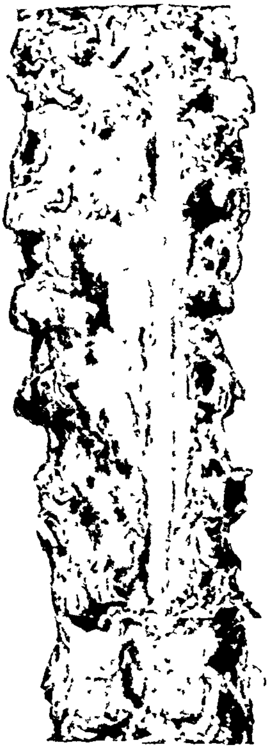

Fig 4 —Posterior aspect of spine in case 20, showing the bony bridge in the laminae, and its reinforcement by a bone graft

In cases with secondarily infected tuberculous abscesses, the outlook is not particularly promising, but we have cases of recovery on record, one or two of them in adults. I think our statistics would be more brilliant if we picked our cases carefully, but we take them as they come. If the patient is able to stand the operation, and has no discharging sinus near the field of operation, we operate. Operation was adopted as the treatment of choice shortly after the orthopedic department was opened at Stanford some twelve years ago. At first in the case of young children, we tried nonoperative treatment, and operated only when this did not seem efficacious. Now we operate on patients of all ages.

Unlike the diagnosis of tuberculosis of other joints, the diagnosis of spinal tuberculosis is usually a tentative one. We are never absolutely sure of our ground, and our results might be questioned on this account. How-

Data in Fifty-Three Cases of Tuberculosis of the Spine Occurring in Clinical and Private Practice

No	Date	Age	Sex*	Location	Complication	Operation	Result	Comment
1	1914	3	♂	7 T (abt)		Hibbs	Death on table	
2	1914	4	♂	1, 2 L		Hibbs	Cure	Well, December, 1925
3	1915	5	♂	"lower T"	Tuberculous tarsus	Hibbs	Cure (1926)	Cure of tarsus also
4	1915	6	♂	T - L		Hibbs	Cure (December, 1925)	Operation done as last resort; child in very bad condition; second operation one year later
5	1915	6	♀	10 12 T, 1 L		Bone grafts	Cure	This was a second operation; a Hibbs had previously been attempted
6	1916	3	♀	6 T		Hibbs	Cure	Bony bridge demonstrated at second operation
7	1916	26	♂	1 3 L	Psoas abscess; tuberculous epididymitis; tuberculous rib	Albee	Failure	
8	1916	21	♂	12 T		Albee	Well one year later	
9	1916	8	♀	12 T 1 L		Albee, 2, Hibbs	Cure	First operation not extensive enough; second operation enlarged area upward
10	1916	5	♂	2 L		Hibbs	Cure	Died of tuberculous meningitis seven years later following mastoid disease
11	1917	18	♂	11 T - 1 L	Tuberculous tarsus	Hibbs	Cure	Tarsus also well in 1925
12	1917	30	♂	4 L	Pulmonary tuberculosis	Albee	Failure	The graft broke during the operation; patient unruly afterward
13	1917	31	♂	7 - 10 T		Hibbs	Death, meningitis, six weeks postoperative	
14	1917	23	♂	1 L		Albee	Presumably well in 1919	*Cannot be found in 1926*
15	1918	12	♂	3, 4 L		Hibbs	Cure	Operation on tuberculous hip four years later; death from mixed infection of hip in 1924
16	1918	8	♂	3 - 5 L.		Hibbs	Cure	Reported as cured in 1924, but not examined
17	1918	9	♂	7 C - 2 T		Hibbs	Cure (one year later)	Cannot be found for examination; in 1925, said by a friend to be well
18	1918	26	♂	12 T - 1 L	Infected lumbar abscess	Albee, 2 operations	Unknown	First operation did not extend low enough
19	1918	28	♂	10 - 11 T		Albee	Failure	
20	1918	4	♂	10, 11 T	Tuberculous sternum	Hibbs, second operation, bone graft	Death, tuberculous meningitis 8 months postoperative	Specimen showed bony union at operative site
21	1919	35	♂	8 10 T	Tuberculous metaphal positive guinea-pig test	Hibbs	Unknown	*Cannot be found*
22	1919	28	♀	12 T, 1 L	Paraplegia	Albee, second operation Hibbs	Unknown	Aspiration of cold abscess gave positive guinea pig test
23	1919	34	♂	2 5 C		Albee	Cure, 1922	Cannot be found in 1925
24	1920	25	♂	4 L		Albee	Unknown	
25	1920	30	♂	3 L		Albee	Unknown	
26	1920	26	♂	5 L	Large infected abscess	Hibbs	Death 18 months postoperative	Patient died from effects of prolonged suppuration
27	1920	32	♂	2 - 3 L	Tuberculous rib, lung and epididymis	Hibbs	Cure, 1926	
28	1920	38	♂	5 L		Hibbs	Cure, 3½ years postoperative	Cannot be found in 1926
29	1920	21	♂	L S		Hibbs	Cure	
30	1920	16	♀	2 5 L		Hibbs, two operations	Cure	Second operation necessary in 1925
31	1920	24	♀	4, 5 L	Psoas abscess, which later broke down and became infected	Hibbs	Abscess still discharging in 1925	
32	1921	5	♀	9 - 12 T.		Hibbs, three operations	Cure	
33	1921	19	♂	7 9 T		Hibbs	Unknown	
34	1921	27	♀	4, 5 L, 1 S		Hibbs, Albee	Failure	A joint persisted between 5 L. and 1 S. after first operation
35	1921	?	♂	4, 5 L	Infected abscess, plus tuberculous tarsus	Hibbs	Unknown; dead in 1926	
36	1921	35	♀	4, 5 L		Hibbs	Cure	Cure reported by letter, but no examination in 1925
37	1921	9	♂	7 - 9 T		Hibbs, 2	Unknown	Second operation two years after first, for persistence of symptoms
38	1921	42	♀	7 T		Hibbs, 2	Cure	Second operation for persistence of symptoms
39	1921	5	♀	3, 4 L.		Hibbs, 2, plus graft	Cure	Second operation for persistence of symptoms
40	1922	4	♂	5, 6 C		Hibbs, 2	Cure	Second operation for persistence of symptoms
41	1922	22	♂	1, 2 L		Hibbs	Cure	
42	1922	21	♂	4, 5 T.		Albee	Unknown	
43	1923	13	♂	2, 4 L,		Hibbs	Cure	
44	1923	18	♂	12 T. - 2 L	Infected abscess	Hibbs	Improved	Great deformity; suppuration for seven years
45	1923	13	♀	2 - 4 L.	Infected abscess	Hibbs, 2	Cure ?	Reported well in 1925, but not examined
46	1923	34	♂	7 - 9 T		Hibbs	Unknown	
47	1923	23	♀	10 - 12 T.	Tuberculous tarsus, tendovaginitis, and finger	Albee	Death	Meningitis, seven weeks after operation
48	1924	14	♀	8 - 10 T		Hibbs	Cure ?	Examined one year after operation
49	1924	5	♂	3, 4 L	Infected abscess	Hibbs	Unknown	Suppuration said to be still going on
50	1924	28	♀	4, 5 L		Hibbs	Cure	Last examined one year after operation
51	1924	38	♂	5 L		Hibbs	Cure	
52	1924	2	♀			Hibbs, 2	Cure	Second operation for persistence of symptoms
53	1925	21	♂	2, 3 L	Enormous psoas abscesses	Hibbs	Cure	

* In this column, ♂ indicates male; ♀, female.

ever, the roentgen-ray picture is fairly conclusive. Fracture gives a different history, and the film shows a crushing rather than a destruction of the bone. In coccidioidal granuloma, the lesions are wont to be multiple, and the oidium can be recovered sooner or later in the pus. It is rare at best. Syphilis can usually be excluded, with care. A syphilitic lesion would tend to grow worse without the appropriate treatment, and quickly better with it, and would not be affected by any operation.

In quite a number of our cases we have obtained strong presumptive evidence from the demonstration of tubercle bacilli in the pus from a cold abscess, by guinea-pig inoculation. Against this, one might argue, of course, that we were not sure of the connection of the abscess with the spine.

In several of the cases, a paraplegia has disappeared after the operation. Indeed, occasionally the improvement sets in almost immediately. On the other hand, one of our histories indicates that a paralysis supervened on an Albee operation. The paralysis is almost always caused by granulation tissue under the posterior common ligament, pressing on the anterior columns of the cord, not by bony pressure, and activity of the process seems to be necessary for the continuance of the paralysis.

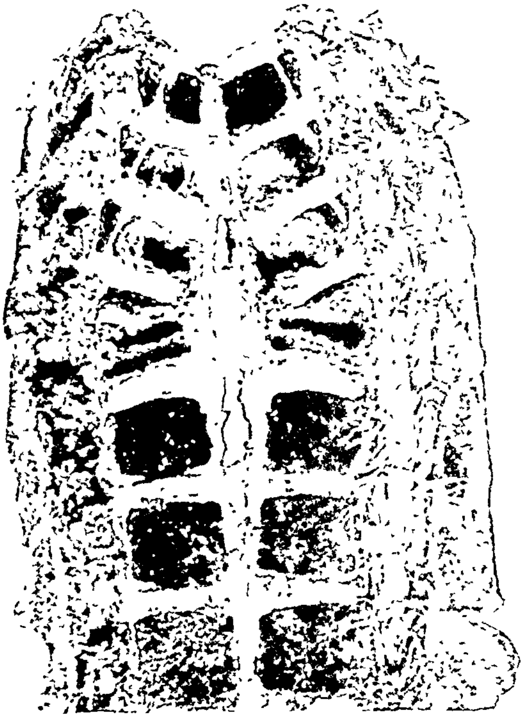

Fig. 5.—Spine in case 20 laid open from behind. The wedge shape betrays the identity of the vertebra first involved In spite of the extensive involvement of the two cephalad vertebrae, the bony bridge keeps them from collapsing. No signs of healing can be seen.

When we speak of a cure after operation, we do so with a reservation. Patients are not cured as they are after a successful appendix operation. The focus of infection remains indefinitely, perhaps throughout life. I have one specimen showing well marked calcification of the lesion, and another without any evidence of repair. In both, the spine was firmly ankylosed. The most we can accomplish is to bring the disease to a standstill.

Tuberculosis of the spine indicates a lack of resistance of the patient to the tubercle bacillus, and the presence of a tuberculous lesion somewhere else in the body. It is not to be wondered at that many of the patients die early. Their death is not to be charged against the spinal operation, and often not to the spinal disease itself. Several of our patients died of meningitis, but only one after so short an interval as to justify a presumption of cause and effect.

In the old days, cold abscesses formed and increased in size during careful treatment with plaster of paris or braces, necessitating prolonged rest in bed. In none of our cases did this occur after the formation of the bony bridge. This is, perhaps, one of the strongest arguments for operative treatment. It stops activity when the nonoperative treatment evidently failed. When, after operation, roentgenograms showed the formation of an abscess or the increase in size of an already present one, a second operation showed that the bony bridge was not complete or was not extensive enough.

CONCLUSION

A rational explanation of all the symptoms and physical signs of joint tuberculosis is that they are nature's effort to put the joint at rest. Laboratory investigation confirms this. Our experience in the orthopedic clinic at Stanford is that spinal tuberculosis *is no exception to the general rule.* An ankylosing operation should be done on patients of all ages, whose general condition permits it. If the operation is not successful, it should be revised. The reason for failure will usually be found to be a break in the bony bridge. The greatest danger is unskilful anesthesia.

Clay and Webster streets.

SPOROTRICHOSIS

REPORT OF TWO CASES

RALPH M. CARTER, M.D.
GREEN BAY, WIS.

While sporotrichosis can no longer be considered a rare disease, in view of the number of cases which have been reported with increasing frequency during the last few years, the condition is sufficiently uncommon to justify putting additional cases on record, particularly if they occur in a region in which it has heretofore been absent, or at any rate unrecognized.

In the last few months, two cases of the disease have come to my attention, both originating in this section of Wisconsin. I have searched the literature of the subject fairly thoroughly, and have been able to find reports of only two additional cases from this state. One of these is mentioned in an article by Meyer,[1] in 1915, and was not verified by culture; the other was described in detail by Baer,[2] in 1920. While the organism cultivated from the latter case differed slightly in some respects from the one usually found, nevertheless typical lesions were present, and there is no doubt that the case was one of true sporotrichosis.

REPORT OF CASES

My two cases may be briefly described:

Case 1.—A rural mail carrier, referred to me by Dr. Frank Wochos of Kewaunee, Wis., July 1, 1925, aged 38, gave a previous history which contained nothing of any significance. The general physical examination was negative. About two months previous to consulting me, while transplanting some shrubbery in his yard, he scratched the right middle finger at the base of the nail on the thorn of a barberry bush. He paid no attention to it at the time, but at the end of a week or so the apparently insignificant laceration showed no signs of healing; on the contrary, it seemed to be getting larger, and in addition a red, painless swelling had appeared on the dorsum of the hand. He treated the original lesion with poultices, ointments and various home remedies, with no effect whatever, as it continued to get worse. During this time more red, nodular swellings had appeared on the hand and forearm. He now sought medical advice, and consulted several physicians in turn. None of them apparently recognized the true nature of the disease, but considered it an unusual form of infection with a pus organism, with an ascending lymphangitis. He was advised to treat it by means of hot fomentations, which he did, with no improvement. More nodules continued to appear on the arm, and the original lesion showed no tendency toward healing. The nodules appeared first as painless lumps in the subcutaneous tissue; gradually the skin over them became a dusky red; the nodules finally became fluctuant and somewhat painful, and some of them opened spontaneously, exuding a thick, gelatinous pus and leaving a small, superficial ulcer, with somewhat undermined edges; this ulcer would slowly heal, leaving a brownish pigmentation of the skin.

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[1] Meyer, K. F.: Relation of Animal to Human Sporotrichosis, J. A. M. A. **65**: 579 (Aug. 14) 1915

[2] Baer, C. A.: Sporotrichosis: Report of a Probable Case, Wisconsin M. J. **18**: 375 (Feb.) 1920.

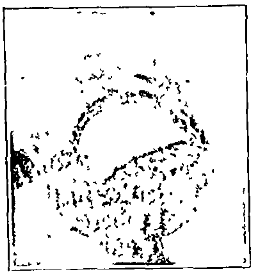

Fig 1 (case 1). — Primary lesion, or sporotrichotic chancre

The appearance of the primary lesion, or sporotrichotic chancre, as it is sometimes called, at the time of my first examination, is fairly well shown in figure 1. The entire end of the finger presented a raw, ulcerated appearance, with exuberant granulations and many small abscesses, from which a yellow pus exuded. The nail was loosened, and pus could be expressed from beneath it. The appearance of this primary lesion presented a superficial resemblance to cutaneous blastomycosis, although there was not the tendency to central healing, and the abscesses were larger.

The nodules on the forearm and upper arm are shown in figure 2. These were in all stages of development: some were not yet visible but could be palpated as hard lumps in the tissues; others were dusky red, slightly elevated and hard; still others were soft and fluctuant, apparently ready to open. Constitutional symptoms were entirely absent, and had been so since the beginning.

Smears were made from the pus from the original lesion, but revealed only pus cells and staphylococci. Cultures of this pus likewise produced nothing but staphylococci. Pus aspirated from one of the unopened nodules showed no characteristic organisms when examined in the smear, but cultures on glucose agar told an entirely different story. The growth was slow in appearing, nothing being visible until the sixth day, when small, white, circular colonies having a rayed appearance developed. These gradually increased in size, the surface becoming corrugated and brownish to almost black. Films and hanging drop preparations from these cultures showed long filaments with numerous ovoid spores. Here and there could be seen single spores, and also bunches of from twenty-five to thirty attached to the filament by a short pedicle or stem. The appearance of a slide is shown in figure 3. The organism corresponded in every detail with *Sporothrix schenkii,* and definitely established the diagnosis.

The patient was immediately put on increasing doses of potassium iodide, and complete recovery promptly followed.

Case 2.—A general storekeeper, aged 45, seen in consultation with Dr. O. W. Saunders of this city, was of the opinion that sometime previously he had scratched his right middle finger on a packing box, though the history of the original trauma was somewhat indefinite. He likewise had been through several hands before we saw him, without the nature of the disease being recognized. The condition present when I saw him was exactly the same as in case 1; having this patient under treatment at the same time, I made the diagnosis with no difficulty; however, cultures were made, and proved positive for *Sporothrix schenkii.* Prompt and complete recovery followed the administration of potassium iodide.

REPORTS IN THE LITERATURE

Sporotrichosis, recognized as a definite entity, is a disease of comparatively recent date, the first case having been reported in America by Schenk[3] in 1898. This was followed in 1900 by the report of another case by Hektoen and Perkins.[4] In 1903, de Beurmann's[5] original report dealing with French cases appeared. Following this, cases began to be reported from all over the civilized world, and the literature of the subject grew rapidly. In 1912, Hamburger[6] stated that more than 200 authentic cases were on record at the time, and since then many additional ones have been reported.

CLINICAL VARIETIES

While the disease usually appears as a cutaneous manifestation, it is by no means confined to the skin structures, and apparently no part of the body is exempt. The frequency with which the skin is attacked is probably accounted for by the usual mode of infection, as a result of minor peripheral traumas. According to de Beurmann,[7] four clinical varieties of the disease may be recognized.

1. A localized cutaneous form, with a definite primary lesion, or sporotrichotic chancre, together with an ascending lymphangitis and local lymphadenitis. The cases reported in this paper belong to this variety.

2. A disseminated, gummatous form. In this variety, multiple subcutaneous nodules appear, distributed throughout the body without systematic arrangement; in the early stage, these consist of small, hard, round, painless masses; later they soften to form large and small soft cold abscesses. A distinguishing feature is the fact that there is no ulceration.

3. A disseminated ulcerative sporotrichosis. This is characterized by multiple polymorphic ulcerations resembling tuberculous, syphilitic, ecthymatous, rupial or furuncular lesions, or a mixture of these.

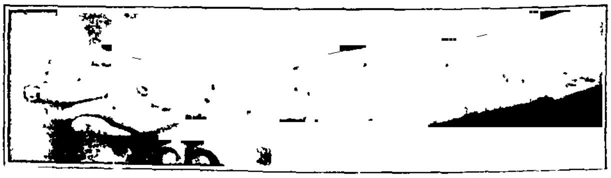

Fig 2 (case 1).—Sporotrichotic nodules of hand and arm.

4. Sporotrichosis affecting the extracutaneous tissues. In these cases, localization may be in the mucous membranes, bones, joints, ocular tissues, muscles, synovial membranes, kidneys, lungs or other viscera or tissues.

THE ORGANISM

The disease is due to infection with *Sporotrichum,* a fungus. When the condition first began to be studied, it was believed that different manifestations were due to different varieties of the organism, and various strains were described, as, for example, *S. schenkii*, *S. beurmani* and *S. dori*. Later investigations, however, seem to have established the identity of all these as *S. schenkii*, the morphologic differences formerly noted as characteristic of different varieties all appearing at different ages of *S. schenkii*, as mentioned by Taylor.[8]

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[3] Schenk: On Refractory Subcutaneous Abscesses Caused by a Fungus Possibly Related to Sporotricha, Bull. Johns Hopkins Hosp. 9: 286, 1898.

[4] Hektoen and Perkins: Refractory Subcutaneous Abscesses Caused by Sporothrix Schenkii, a New Pathogenic Fungus, J. Exper. Med. 5: 77, 1900.

[5] De Beurmann and Raymond: Ann. de dermat. et syph. 4: 678, 1903.

[6] Hamburger, W. D.: Sporotrichosis in Man, J. A. M. A. 59: 1590 (Nov 2) 1912.

[7] De Beurmann: Brit. M. J., 1912, p. 289.

In certain parts of the United States, especially Pennsylvania, Ohio, Indiana, Iowa, Nebraska and North and South Dakota, spontaneous sporotrichosis of domestic animals, particularly horses, is very common. From the same districts, numerous cases of human infection have also been reported, and it has been definitely determined by Meyer[1] that the infecting organisms in the equine and human types are identical. In spite of this fact, it seems to be fairly well established that contact infection from animals to man is very rare.

The fungus seems to have a rather wide distribution in nature, being present especially on shrubbery and grain stalks. Several cases of infection have occurred from the handling of rotten logs and stumps, when new land is being cleared.

The organism is practically never found in the pus from discharging abscesses; cultures from these abscesses are likewise unsatisfactory. It is readily grown, however, from pus obtained by aspiration from an unopened nodule.

The fungus grows on all ordinary mediums, best in the presence of glucose and slight acidity, at room temperature. One of the most satisfactory is 2 per cent glucose agar. The growth is slow in appearing, and nothing may be noted for from five to seven days. At the end of this time, on agar slants, small, white, circular colonies appear, which rapidly enlarge peripherally, and assume a rayed appearance; in stabs, the growth has a radiating, flower-like appearance. The colonies become raised, and the surface corrugated, and as the growth gets older, it is brown to brownish black. Subcultures from the original culture have a tendency to grow much faster, the colonies appearing within forty-eight hours.

The organism stains readily with the ordinary stains, such as Loeffler's methylene blue, azure, Giemsa's and methyl thionin. In many cases, according to Taylor, the spores and young mycelia are gram positive and acid fast.

A suitable preparation, examined microscopically, shows aboundant branching, septate mycelial threads and numerous ovoid, pea-shaped spores. These spores may appear attached laterally to the mycelium by a delicate pedicle, or in clumps at the ends of the short threads. In the older cultures, free spores are numerous.

The disease may occur at any age, but the majority of the cases reported are in adults, undoubtedly because this is the time of greatest manual activity, with consequent greater likelihood of infection. For the same reason, more men acquire it than women. Cases are more numerous among farmers, fruit and vegetable dealers, berry pickers and florists.

In the ordinary cutaneous form, which is most frequently encountered, infection usually follows a trivial trauma, such as a scratch from a nail or wire, a knife cut, or a prick from a thorn or stalk of grain. Cases are reported following the bite of a rat or hen. The period of incubation is slow and the onset insidious; more and more nodules form, following the course of the lymphatics; the clinical course is slow and long drawn out; there is no pain or fever, and no effect on the general health. All these characteristics are typically shown by the two cases reported in this paper.

Occasionally, the deeper structures such as the tendon sheaths, and even the bones may be attacked; or a sporotrichotic septicemia may occur, with multiple gummatous lesions of the skin and viscera.

Microscopically, according to Taylor, the lesions are granulomatous in appearance. The center is usually necrotic; surrounding this is a zone of dense cellular infiltration, with polymorphonuclear cells predominating; outside the latter zone is a large area of congestion, hemorrhage and infiltration of large eosinophilic cells, with marked proliferation of connective tissue and frequent giant cells. The spores of the organism can be demonstrated in the lesions, more numerous at the periphery of the necrotic area, but distributed throughout, and usually intracellular. The mycelium cannot usually be satisfactorily demonstrated in the lesions.

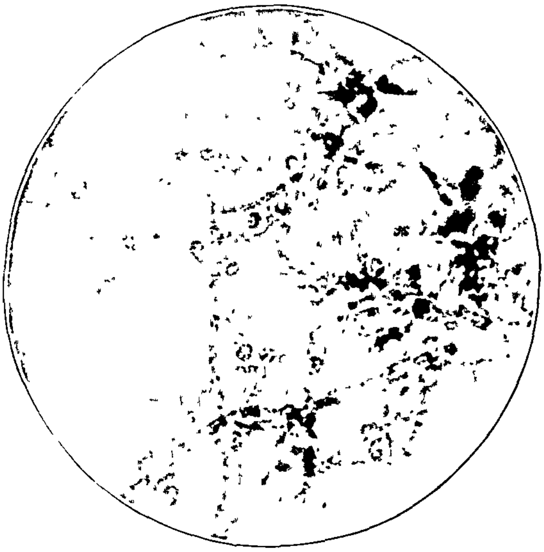

Fig 3 —Stained preparation from culture showing mycelia and spores; × 1,200

DIAGNOSIS AND TREATMENT

The diagnosis, in the form of sporotrichosis most frequently encountered, that affecting the extremities, is not difficult after the case has developed and the nodules have formed, as the disease presents a characteristic appearance. Under these circumstances, the only other condition likely to be confused with it is an acute ascending lymphangitis and lymphadenitis; but such an error would be excusable only if no opportunity were given for examination other than mere inspection. It is true that both conditions present the picture of red streaks and enlarged lymph nodes secondary to an infected wound, but here the resemblance ceases. In sporotrichosis, the wound of entrance presents an entirely different appearance; the streaks are more pronounced, the glandular nodules, in addition to being palpable, are visible as dusky red swellings and are more numerous; the history shows a prolonged course, and pain, disability and constitutional symptoms are conspicuous by their absence. All this forms a clinical picture that is difficult to mistake for anything else, and a highly probable diagnosis can be made from the physical examination alone, which is rendered positive by the presence in the blood of an agglutination reaction for *Sporotrichum*, and later, by the cultivation of the organisms from pus obtained under sterile precautions from one of the unopened nodules. The presence of an eosinophilia, while confirmatory, is of no real diagnostic significance, since it occurs in many other conditions.

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[8] Taylor, Kenneth: Sporotrichum Schenkii, J. A. M. A. 60: 1142 (April 12) 1913.

Other forms and modifications may present more difficulty. The primary lesion, or chancre, strongly resembles cutaneous blastomycosis; it differs, however, in that the abscesses are larger. There is not the marked tendency to central healing; large crusts do not form, and the peripheral local spread of the lesion is slower. Likewise, cutaneous blastomycosis does not give rise to the lymphangitis and lymphadenitis so characteristic of sporotrichosis. With involvement of the deeper structures and bones, with the tissues riddled with sinuses, as sometimes occurs, and with the extensive secondary infection always present after the nodules have opened, the picture is far from typical. In such a case, tuberculosis may enter into consideration; in fact, it may occasionally be present. Under certain circumstances, too, it may become necessary to rule out syphilis and epithelioma.

Having the salient features of the disease and the possibility of its occurrence in mind, however, with a little care the diagnosis should offer no insurmountable difficulties. Naturally, a careful history of the disease from its inception should be taken; the occupation of the patient, the nature of the original trauma, the insidious onset and slowly progressing course of the disease, whether or not it has shown any effect on the general health, all these points are important, and throw light on the condition present, so they should be carefully considered. No reliance can be placed on a fresh smear from the lesions; in most cases the organisms cannot be demonstrated; cultures should always be made, and with these cultures, the agglutination test can be carried out. I wish to emphasize once more that the material for cultures must be taken from the unopened nodules; secondary invaders are always present in the primary lesion and in the open nodules, and no growth of *Sporotrichum* will be obtained from pus from these sources.

The treatment is simple, and consists in administering increasing doses of a saturated solution of potassium iodide. Local applications of compound solution of iodine (Lugol's solution) may hasten the disappearance of the primary lesion. Under this management, the patients all recover.

Silicosis.—As an aid to physicians in the state of New York in diagnosing cases of silicosis, Dr. Leland E. Cofer, director of the bureau of industrial hygiene of the New York State Department of Labor, has had prepared a special bulletin in which is presented a summary of the medical literature with especial reference to diagnosis. The bulletin states: Careful studies which have been made of the mortality reports of different countries and cities throughout the world show that the death rate from tuberculosis of the lungs greatly varies. Silicosis is not a well known disease and has not, therefore, been entered on the death certificate as a cause of death, but rather, the terms phthisis pulmonalis, fibroid phthisis or tuberculosis of the lungs have been used. The term "phthisis" is unfortunate, unscientific and, as the statistics show, has been misleading. The sooner it is expunged from the vocabulary of the physician the better it will be, not only for the value of the records, but also for the workers in dust and the reputation of tuberculosis.—*Pub. Health Rep.* **41**:521 (March 19) 1926.

ISACEN (GUGGENHEIM): A NEW PURGATIVE *

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Modern pharmacology is not satisfied with the manufacture of remedies from roots and plants, but tries to obtain the specifically acting principles in pure form. It also tries by new synthesis to produce remedies that act more favorably than those found in nature.

Guggenheim[1] was very much interested in the investigations of Lenz,[2] and developed a new remedy based on them. Lenz made extensive experiments on cats in which an abdominal window was established, so that different remedies could be studied with regard to their action on the intestinal tract. He found that most of the aperient remedies exerted their action by exciting the peristalsis of the colon, when coming into contact with this organ. The effect on the intestine of an extract of senna leaves, or of the different ingredients contained in it as a mixture of anthrachinon derivatives (as anthrachinon glucosides, emodin and chrysophanic acid), consists in provoking peristaltic action when the latter is applied to it. There is, however, some slight difference in the mode of action if each of the foregoing ingredients is applied separately. Phenolphthalein belongs to the same group of substances and acts in a similar manner.

The cause for this difference in the action of the remedies mentioned is explained by Guggenheim through their different degree of acidity and also by their different quality of solubility. On the whole, all combinations whose acidity is less than that of phenolphthalein act weaker than this ingredient, while those substances which have a greater acidity act more efficiently on the intestinal peristalsis.

There is, however, a certain point of acidity which marks the optimum of efficiency above which again the effect changes into inactivity, so that no laxative action results.

Guggenheim synthetically produced a substance similar to the foregoing ingredients, namely, bisoxyphenylisatin, which has a slightly higher acidity.

Guggenheim thought that theoretically this substance would act well as an aperient. In experimenting on himself he found that it really had a laxative effect. However, this substance had the disadvantage that it was slightly soluble in the gastric juice and in this way exerted its action by provoking the peristalsis of the stomach. This untoward early action causes at times nausea and vomiting and thus detracts from its value as a laxative remedy. By changing this substance into a compound which is obtainable by acetylization of bisoxyphenlyisatin, he obtained a new chemical, diacetylbisoxyphenylisatin, which he called isacen.

Isacen is insoluble in acids or water. In this way it cannot be absorbed in the stomach and cannot exert any action while present in this organ. When isacen comes into contact with the alkaline secretion of the duodenum, it is saponified and splits into bisoxyphenylisatin, and in this way can now exert its action on the bowels.

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* Because of lack of space, a table and the structural formulas are omitted from The Journal. The complete article appears in the authors' reprints.

[1] Guggenheim, M.: Die spezifische Kolonwirkung der Abführmittel und ihre Abhängigkeit von der chemischen Konstitution, Schweiz. med. Wchnschr. **55**:16 (Jan. 1) 1925.

[2] Lenz: Observations à la fenêtre abdominale colique du chat, Arch. internat. de pharmacod. **28**:1, 1923.

Guggenheim first tried this new substance on himself. He took 5 mg. from two to four times daily and found that it acted as an aperient without any untoward results.

Katzenelbogen and Guder [3] have tried isacen on many patients in their clinics and corroborate Guggenheim's findings.

On account of the importance of a remedy for constipation, which is such a prevalent condition, we decided to investigate the action of isacen on patients and to study its results.

We made these investigations on private patients and in the Home of the Daughters of Jacob. The inmates of the latter institution are persons aged from 60 upward. Most of them are subject to constipation and rather more difficult to handle than young and healthy subjects, and for this reason they appeared especially appropriate to decide whether or not isacen can be considered a useful remedy for constipation. The accompanying table gives the results of the investigation.

The table contains records of forty-seven patients who took isacen for a whole month. Tablets containing 0.005 Gm. were given two, three or four times daily. In thirty-nine patients nothing else was required to keep the bowels tolerably regular. In eight of the remaining patients an enema or epsom salt was given on some days, while on other days the isacen was sufficient to produce an evacuation of the bowels. Twenty-eight of the forty-seven patients were entirely free from pain or colic while using isacen. Of the remaining nine patients, one had severe pain before and during defecation, while eighteen experienced occasionally some pain either before or during defecation.

The number of movements fluctuated from one to two, seldom three or four a day. Occasionally there would be no movement for a day or two in some of the cases.

All the forty-seven patients were more or less chronic invalids. Four had diabetes. Four had chronic nephritis; nine, paralysis agitans; nine, general arteriosclerosis; two, senile dementia; three, chronic constipation of a severe type; two, tuberculosis of the lungs and pharynx; seven, chronic myocarditis; two, general debility, and one, chronic gastritis.

A laxative remedy will certainly be more efficacious in healthy persons than in invalids. Isacen has proved of great help in these old and helpless patients, and will certainly be of assistance in the routine work of treating constipation.

We also investigated the duodenal contents of a number of patients employing isacen. We usually had the patient take one tablet (0.005 Gm.) of isacen on retiring, and we examined the duodenal contents of the patient the next morning in the fasting condition. In some, neither isacen nor isatin could be detected by the foregoing reactions; in others, we succeeded in demonstrating the presence of isacen only.

In a number of patients who were on duodenal feeding, isacen was given directly through the duodenum. Some patients showed no symptoms and had a bowel movement daily, while a few complained of nausea and slight colicky pains in the abdomen. Anyway, when isacen is applied through the duodenum, more frequently undesired symptoms are encountered than when given by mouth. The reason for this is the larger amount of isacen reaching the duodenum at one particular time, while when administered by mouth, only very small fractions of the medicament reach the intestine at one time.

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[3] Katzenelbogen, S., and Güder, R.: Note thérapeutique sur un nouveau purgatif, Schweiz. med. Wchnschr. 55: 18 (Jan. 1) 1925.

PHYSIOLOGIC EFFECTS OF SPERMATOXIN

IN RATS, RABBITS AND GUINEA-PIGS *

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One of the chief obstacles preventing definite location of the source of the testicular hormone has been the fact that the several types of tissue in the testis have been inseparable. Only a few authors have been bold enough to state that in their experiments only one type of tissue remained, the other tissues having degenerated. Always in addition to interstitial cells there have been present Sertoli cells and in most cases also spermatogonia. A few workers have claimed partial degeneration of Sertoli cells, but their evidence lacks conviction. As Whitehead [1] stated, only when we can definitely eliminate each type of tissue will the problem be solved.

In seeking a method of eliminating each type of tissue in the testis, it occurred to me to use the cytolysin or antibody production method. In this way, it was hoped that a specific antibody for the germ cells might be produced which would cause complete elimination of the germinal epithelium in treated animals. This specific antibody might conceivably destroy all the germ cell line and leave only Sertoli cells and interstitial cells. Furthermore, it seemed probable that such a cytolysin would also destroy the Sertoli cells because of their position in the seminiferous tubule and because of their otherwise close relationship to spermatogenesis.

The production of such antibodies for sperm has been reported by many workers. Metchnikoff [2] and Landsteiner [3] introduced this field of investigation in 1899. Since then it has been reported on by a number of experimenters. I have found no reports of negative findings; i. e., that a spermatoxin is not formed.

Various criteria have been used as proof of the formation of such spermatoxin. Among these are immobility and agglutination of sperm by serum from immunized animals, delayed pregnancy in immunized females, and injury of the testes in animals injected with their own sperm or sperm from other species of animals.

I have been unable to obtain any evidence of a physiologic reaction. Several series of experiments testing this point have been performed, the fertility of both male and female animals and the condition of the testes being used as criteria. These have been adopted as physiologic tests, leaving the agglutination reaction as a distinct serologic problem. This course has been taken because it is my belief that a serologic or

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* From the Department of Physiology, University of Illinois College of Medicine.

* This work was aided by a grant from the committee on sex research of the National Research Council.

[1] Whitehead, R. H.: Anat. Record 7: 83, 1913.

[2] Metchnikoff: Ann. de l'Inst. Pasteur 14: 369, 1900.

[3] Landsteiner: Centralbl. f. Bakteriol. 25: 546, 1899.

immunization reaction may be set up without in any way interfering with the production of spermatozoa or with the fertility of ova.

Albino rats, guinea-pigs and rabbits have been used in these experiments. The work was started on rats because of their fecundity, and because of the fact that they are well adjusted to laboratory confinement. They do not, however, serve well for the production of antibodies, and it was thought best to extend the series by using guinea-pigs and rabbits. The latter animal has been found adapted to this work and has also been used in experiments on spermatoxin formation. The results are presented in several series according to their nature, and the accompanying tables summarize each group.

REPORT OF EXPERIMENTS

Twelve male rats were injected with a suspension of sperm in saline solution. This was obtained by cutting testes into small pieces and shaking in sterile saline solution. One testis finely minced and shaken in 5 cc. of saline solution was used as a standard suspension. Sperm from several species of animals has given the same results, but for the sake of uniformity only those experiments in which rat sperm has been injected into rats, guinea-pig sperm into guinea-pigs and rabbit sperm into rabbits are reported in this paper. Each rat was injected (intraperitoneally) from one to five times, 1 cc. of sperm fluid to each injection being used. The number of days between injections varied, as will be seen in table 1. The condition of the testes was the only criterion used in this series as a test for results. Testes were removed from these animals at from seven days to four months after the last injection. The testes were then prepared for microscopic study in the usual manner.[4] In experiments 4, 6 and 10 of this series, degeneration of seminiferous tissue was found. In experiment 4, both testes were removed fourteen days after the last injection. The degree of degeneration is not the same in each testis, and both showed many tubules which appear perfectly normal. In experiment 10, one testis, removed fourteen days after the last injection, was normal. No sign of degeneration was found in it. The other testis, removed thirty days after the last injection, had some degenerated seminiferous tubules, while the remaining were normal. In experiments 4 and 6, the degeneration was found within fourteen days, while in experiment 10 it was found at thirty days, though not at fourteen days. All animals in this series were well advanced in age. At such times it was not uncommon to find them with the testes retracted into the abdominal cavity. Testes are very sensitive to conditions such as malnutrition, anaphylatic shock and even unfavorable environment. The degree of degeneration found in these experiments and the irregularity of their appearance, as in experiment 10, indicates such a response.

Table 1.—*Results of Experiments in Male Rats Injected with Sperm*

Experiment	Dates of 1 Cc. Injections	Time Between Last Injection and Removal of Testis	Condition of Testes
S 2.......	1-6-20-30-44	Right....14 days	Normal
		Left......14 days	Normal
S 3.......	1-6-20-30	Right.... 2 months	Normal
		Left...... 4 months	Normal
S 4.......	1-6-20-30-44	Right....14 days	Some tubules degenerated; other tubules normal
		Left......14 days	Disorder in some tubules; other tubules normal
S 5.......	1-6-17-27	Right.... 1 month	Normal
		Left...... 1 month	Normal
S 6.......	1-19-29	Right.... 9 days	No spermatozoa but spermatids; extensive degeneration in some tubules
		Left...... 9 days	Same as right testis
S 7.......	1-17-27	Right.... 4 months	Normal
		Left...... 4 months	Normal
S 8.......	1-4-8	Right....14 days	Normal
		Left......14 days	Normal
S 9.......	1-7-13	Right.... 1 month	Normal
		Left...... 2 months	Normal
S 10.......	1-7-13	Right....14 days	Normal
		Left...... 1 month	Some tubules show degeneration; other tubules normal
S 11.......	1-7-13	Right.... 7 days	Normal
		Left...... 1 month	Normal
S 12.......	1-4-8	Right....14 days	Normal
		Left...... 1 month	Normal
S 13.......	1-4-8	Right.... 1 month	Normal
		Left...... 1 month	Normal

Table 2.—*Results of Experiments in Male Guinea-Pigs Injected with Sperms*

Experiment	Dates of 15 Cc. Injections	Time Between Last Injection and Testis Removal	Condition of Testis
S 43........................	1-4-8	One week	Normal
S 44........................	1-4-8	Two weeks	Normal
S 45........................	1-4-8	Three weeks	Normal
S 46........................	1-4-8	Four weeks	Some denegeration
S 47........................	1-4-8	Four weeks	Normal
S 48........................	1-4-8	Five weeks	Some degeneration

Spermatogenesis appeared normal in nine of the twelve experiments, though some of the testes seemed slightly flabby before fixation. As most of the testes were normal, it seems reasonable to suppose that this is the natural course of events in such experiments.

In a second series of experiments, rabbits were used instead of rats. Two males were each injected three times at three day intervals with 1 cc. of rabbit sperm suspension. They were killed three weeks and one month after the last injection. In both animals the testes were normal.

In a third series, six guinea-pigs were used. Each animal was injected three times at three and four day intervals with 1.5 cc. of guinea-pig sperm suspension. Testes were removed from these animals at periods of from one to five weeks after the last injection (table 2).

In each of four experiments there was full spermatogenesis, and the testes appeared normal. These animals had been used for bleeding purposes before these experiments were undertaken, and control testes were also degenerated.

Guyer[5] reported several of these experiments in which spermatozoa taken from rabbits that had been injected with their own sperm were used for agglutination tests. Certainly in these experiments spermatogenesis had continued, if he obtained sperm from them for later use. In other experiments, as in experiment 1, the rabbit, after five injections of immunized fowl serum, fertilized a female three days after the last injection. Later matings were unsuccessful, though the testes presented normal histologic pictures. In these experiments the degenerative process should have started at once, since the developed antibody (immune serum) was injected. Professor Guyer suggests the possibility that the effect on spermatogenesis might be due simply to the general lowering of the animals' vitality; he thinks, however, that it is a spermatoxic effect.

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[4] Compare, for example, Oslund, R. M.: Am. J. Physiol. **70**: 112 (Sept.) 1924.

[5] Guyer, M. F.: J. Exper. Zool. **35**: 207, 1922.

McCartney[6] reports that in adult male rats injection of rat spermatozoa or extract of testis results in the destruction of spermatoza and in some cases in atrophy of the testis. He presents six experiments. Two of these rats became sick and should not be included. In one rat the testis at first became enlarged and later atrophied. They contained about half the normal number of spermatoza, and these were immotile. Two other rats showed enlargement of the testes for the first two weeks, but within a month had returned to normal size. "On examination seven weeks after injection, the testes appeared normal, although they did not contain as large a number of spermatozoa as normally. These were motile." The sixth was not affected by the injection of testis extract. In this series, therefore, are found three "normal" rats and one with atrophied testes which had about half the normal number of spermatozoa. These were immotile.

Kennedy[7] reported degenerative changes in the testes of guinea-pigs into which had been injected spermatozoa. He reported that the effects were more pronounced when the animals' own sperm was used for the injection. In Kennedy's experiments the results were not constant. The degenerative changes were found in some of the testes, while the others were normal.

In each of the series by Guyer, McCartney and Kennedy are found experiments in which spermatogenesis is apparently undisturbed, and the animals were fertile. These results are similar to those I obtained and indicate that degeneration of germinal epithelium is not necessarily a consequence of such injections of spermatozoa.

It was reported by each of the workers cited above that females injected with sperm became sterilized, because of the formation within them of an antibody against sperm. Other series of experiments were performed to test this point. In each of these series, the same standard of sperm has been used as in the male experiments.

Table 3.—*Results of Experiments in Females Injected and Then Mated*

Experiment	Dates of 1 Cc. Injections	Number of Young	Days After Last Injections
50	1-4-7	9	22
51	1-4-7	12	26
52	1-4-7	7	28
53	1-4-7	13	35
54	1-4-7	10	39

In one series five female rats (all virgins, 4 months old) were each injected with 1 cc. of sperm at three day intervals. They were then each placed with a male. Good litters were raised from each mating. Results in brief are given in table 3. Gestation varies from twenty-one to twenty-eight days, and copulation takes place when the female comes in heat. Since the maximum time between the date of mating and the birth of the young was thirty-nine days, in each case the first copulation must have been successful.

Another series of experiments was made to determine the possibility of producing sterility in female rats by injecting sperm into them. In this series six female rats were first mated, and then the injections were begun. Each rat received two or three injections of 1 cc. of sperm at three day intervals. Each animal was then placed in a separate brood cage. Results are tabulated in table 4. Rats 33, 35 and 36 each gave birth to good litters of young within two weeks of the last injection. Rats 31, 32 and 34 did not give birth to young from this mating. Rats 31, 32 and 33 were again mated about thirty days later, and each gave birth to good litters. The maximum time from the last injection to birth of the second litter of young was seventy days. Forty-nine days elapsed before pregnancy took place, but during that time this rat was isolated and nursing young. She received the male at the next heat period, and this copulation was successful.

Table 4.—*Results of Experiments with Females Mated and Then Injected*

Experiment	Dates of 1 Cc. Injections	Number of Young	Days After Last Injection	Number of Young from Second Mating	Time After Last Injection
31	1-4-7	0	..	8	62 days
32	1-4-7	0	..	8	48 days
33	1-4	10	14	10	70 days
34	1-4-7	0	..	Not mated	....
35	1-4-7	9	11	Not mated	....
36	1-4-7	10	11	Not mated	....

In these two series of experiments, injection of sperm into female rats has not prevented pregnancy. Nor has it in any case delayed pregnancy. It has caused abortion. Successful copulations took place soon after the last injection—in one case on the following day.

It was thought possible that a spermatoxin may have been developed in the female, and this affected the embryos after passing through the placenta. First matings of both male and female offspring proved successful in every case. The young did not suffer in fertility or in any other demonstrable way from the injection of sperm into their mothers before or during pregnancy.

In these two series of experiments in which females were injected with sperm, pregnancies took place from the first copulations following the last injection. In no case was copulation unsuccessful. In three experiments, rats that were injected during pregnancy gave birth to full litters of young. The young were fertile in all cases and were used as breeding stock.

Savini[8] made from five to six subcutaneous or intraperitoneal injections of sperm into fifty-seven female rabbits and guinea-pigs one week apart. Seven days after the last injection, these females were allowed contact with males. They were placed together for from ten to fifteen days. Copulations appear not to have been noted. No young resulted from the first contacts, but in many cases conception took place on a second contact of five days only. This is not altogether uncommon for normal breeding stock of rabbits, though some conceptions would be expected from the first contacts. If the contacts happened to occur between the heat periods, the same would be true for the guinea-pigs. The period of immunity was strikingly short, if it existed in Savini's experiments, in that young were produced from the second contacts. He also states that no injurious effects were noted in mice which he injected with sperm. Venema[9] reported two experiments in which he injected a saline suspension of testis into female rabbits. The suspension was kept in an icebox three hours and then before injection was strained through cloth. Pregnancy did not follow, although the females were kept with the males for some time. This was probably part of the difficulty. Pregnancies seldom result from continued contacts in normal rabbits. Dittler[10] injected female rabbits with fresh sperm at intervals of from one to eight days. After two injections of 2.5 cc. four days apart sterility lasted four weeks. Since the heat period in rabbits occurs about every thirty or thirty-two days, it appears that pregnancy took place at the next copulation. He further states that though no pregnancies resulted after such injections, conception occurred later. After injection with large doses of human sperm his animals always appeared entirely normal. McCartney[11] reported a series of spermatoxin experiments on female rats. From his table,[12] it appears that injections of sperm or testis extract delay pregnancy. Some of his animals, especially those injected with testis extract and human semen, produced young from the first possible matings, as litters were cast in four weeks. His report is based on seventy-nine breeding tests, but so many deaths were reported that the condition of his animals may well be questioned. He reports, however, that all his controls were fertile. All tested young from injected females proved perfectly normal in his series. In the first paper he also reported a series of six experiments on chickens. From them he concludes that subcutaneous injection of rooster sperm suspension into egg-laying hens does not influence the rate of egg production, but renders the egg infertile for a period of from twelve to sixty-seven days. Kennedy[7] stated that female guinea-pigs were made sterile by injecting spermatozoa into them.

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[6] McCartney, J. L.: Am. J. Physiol. **63**: 207 (Jan.) 1923.

[7] Kennedy, W. P.: Quart. J. Exper. Physiol. **14**: 279, 1924.

[8] Savini, E.: Compt. rend. Soc. d. biol. **71**: 22, 1911.

[9] Venema, T. A.: Deutsche med. Wchnschr., 1916, p. 1419.

COMMENT

In all the experiments reviewed, pregnancies have resulted from some of the early matings after injections of sperm or sperm extract. As contended by the writers, the pregnancies have generally been delayed, but only to the next period of heat in the great majority of experiments. If we accept experiments as recorded and interpreted, it appears that an antibody (a spermatoxin) has been developed in the female, which in most experiments has not lasted more than thirty days. Such a fact is conceivable but highly improbable. The present status of experiments indicates that toxins or antibodies remain active for a longer peroid of time.

Immunity reactions are limited in their influence in the body. Immunity to typhoid does not appear to extend into the digestive tract, nor do the gonococci antibodies affect gonococci in the urethra or vas deferens. An antibody built against sperm would not injure the chemical constituents used in the construction or nourishment of sperm, but would be toxic for the built up products and slightly toxic for the closely related cells. A spermatoxin in the blood of a male rat, rabbit or guinea-pig would have to wield its toxic influence on sperm through the walls of the seminiferous tubules. It is unlikely that spermatozoa in the seminiferous tubules, in the epididymis or in the vas deferens would be injured by a spermatoxin found in the blood of that animal.

The situation in the female is analogous. The ovum is quite secure against any antibody that might be present in the maternal blood. The vaginal and uterine secretions might, but very probably would not, contain these antibodies or spermatoxin. McCartney,[13] however, reports agglutination tests in which such fluids were used showing probable reactions. Functionally, these animals prove to be normal.

There is little reason to doubt that a sperm antibody is produced in animals into which sperm of another species has been injected.[14] There is reason to doubt that a sperm antibody has been built up in the blood of the animals into which their own sperm or sperm suspension has been injected.[15] It is not a foreign protein. In some experiments an autospermatoxin has supposedly been produced in the observed animals following such injections. With an antibody present in the blood of an injected animal, physiologic changes should follow were it not for the limited sphere of antibody activity. Physiologic reactions have been reported, but it is very probable that these antibodies either formed in the blood or injected into it are unable to attack spermatogenic cells in the genital organs.

Metalinikov and Strenikov[16] stated that when spermatoza are placed in the body tissues, a spermatoxin is produced, although the antigen may be implanted in the tissue as an entire testis graft. This seems quite reasonable from a general point of view. It is a foreign protein. But it may persist and grow as a part of the host bearing it. Whether or not there is formed an antibody against it in the blood of the bearer is beyond the point of this paper. Such an antibody, if present, has no effect on spermatogenesis in the case of the male, or on fertility in the case of females. Copulations of males bearing testis grafts have been successful in my cages, and Moore[17] has reported females bearing testis grafts giving birth to young. Such testis grafts usually contain only spermatogonia and some spermatocytes, but these cells should provide an antigen almost identical with spermatozoa.

In another series of experiments on guinea-pigs and rats, the vas deferens was resected. The testicular end was left open, so that the spermatic material formed in the testis flowed into the peritoneal cavity. In these experiments an antigen has been supplied constantly. The testes of these animlas were normal when removed at from one week to six months after resection of the vas.

SUMMARY

It therefore appears that spermatoxins developed in the blood of the male animal have no effect on spermatogenesis or on mature sperm in the genital tract. Temporary aspermatogenesis found in some experiments is probably a consequence of general body reaction, to which testes are very sensitive, and not a specific reaction. The aspermatogenesis reported by various writers is too irregular in its appearance to be the result of specific antibody built up by regular procedure. It also appears quite probable that spermatoxins developed in the blood of the female animal have no effect on the natural response of its ova to sperm.

General bodily reactions, especially the resulting anaphylaxis, cause abortion of ova and often of embryos, if the animals are pregnant. The delay of pregnancy occasionally found appears to be very short in duration and is probably caused by physical disturbances of the body rather than by antibody reactions. Some of the delayed pregnancies reported in the literature appear to have been due to breeding conditions.

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[10] Dittler, R.: München med. Wchnschr. **67**: 1495 (Dec. 24) 1920.

[11] McCartney (footnote 6); Am. J. Physiol. **66**: 404 (Oct.) 1923.

[12] McCartney, J. L.: Am. J. Physiol. **63**: 212 (Jan.) 1923.

[13] McCartney, J. L.: Am. J. Physiol. **63**: 214 (Jan.) 1923.

[14] Hektoen, Ludvig: Specific Precipitin Test for Human Semen, J. A. M A. **78**: 704 (March 11) 1922. Hektoen, Ludvig; and Manly, L. S.: J. Infect. Dis. **32**: 167 (Feb.) 1923. Taylor, A. E.: J. Biol. Chem. **5**: 311, 1908. Farnum, C. G.: The Biologic Test for Semen, J. A M. A **37**: 1721 (Dec. 28) 1901.

[15] Guyer (footnote 5). Savini (footnote 8).

[16] Metalinikov and Strenikov: Ztschr. f. Immunol. **17**: 186, 1913.

[17] Moore, C. R.: J. Exper. Zool. **33**: 129, 1921.

IMPORTANCE TO THE PRACTICING OPHTHALMOLOGIST OF CONTRIBUTING TO LITERATURE *

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To make a satisfactory contribution to literature, it is necessary first of all to select a subject, and then to be familiar with the literature pertinent to that subject.

Some knowledge of literature is in fact a necessary qualification, and this is not as difficult as it may seem, for our fundamental knowledge of any subject can be learned from textbooks. They contain the accumulated knowledge of previous observers which time has shown to be correct. Our knowledge grows through the addition of new observations, which in turn must be substantiated before they are adopted and admitted to the textbook. During this probationary period, which is necessarily often quite long, the observations must be made available by appearing in the current journals. A knowledge of these observations is necessary to keep abreast of one's subject. Their study creates new interest in our work, which from repetition frequently becomes monotonous, and this result is never more true than in our work as specialists. Our minds become prepared for new observations and new points of view, and we enlarge our points of contact with those whom we are otherwise not likely to meet. The publication of a new observation thus brings about an active exchange of opinion, our literature becomes more virile, and greater progress is made toward our common goal, the elucidation of truth. It is stated that the dignity of any branch of learning is directly proportionate to the excellence of its literature. What, then, can be more important for any of us than to have participated even in the humblest way, in the development of ophthalmology?

The desire to contribute to literature makes for a more careful examination of our observations. Did not Francis Bacon say many years ago, "Reading maketh a full man, conference a ready man, and writing an exact man"?

The genius of ophthalmology lies in fine distinctions. Our problems, owing to the delicacy of the eye, are characterized by their exactness, so that there must be a willingness to make fine distinctions, which in turn require exact thinking, and thus induce sound action.

There is no better way to find out omissions in our work than in attempting to write about it. The necessary thinking over our findings, so as to come to a logical and satisfactory conclusion, is of the greatest value. The gaps in our knowledge and reasoning can be shown up better in writing than by any other means.

It is frequently stated by the new observer that he finds nothing worth while to write about. This I think means that he has not sufficiently studied the subject. Since the humblest observations may be the basis for a satisfactory report, it is not necessary to wait for divine inspiration to publish an epoch-making discovery. Remember what Ruskin said: "It is no man's business whether he has genius or not; work he must, whatever he is, but quietly and steadily, and the natural and enforced results of such work will be always the things that God meant him to do, and will be his best."

All too frequently writing is postponed and the time for the development of this important habit is passed by, until difficulties increase, and become unsurmountable.

Allbutt says that "inspiration for advance in medicine must be derived from observation of patients." Therefore we should examine our cases thoroughly, make very full notes, and not trust to the memory. The value of a simple but carefully completed clinical contribution should *not* be underestimated; while it may not of itself solve a problem, it may help the correct interpretation of the next case. There is no more helpful statement than Paget's that "practice is full of opportunities for science. Clinical science is as much a science as any other branch of biology. It is the best means of increasing our knowledge of disease."

So we should not hesitate or postpone, but make a beginning in writing; an observation should be written up while it is fresh in one's mind and full of interest. Remember Faraday's secret, which he summed up in the words "Work, finish, publish."

10 East Fifty-Fourth Street.

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* Chairman's address, read before the Section on Ophthalmology at the Seventy-Seventh Annual Session of the *American* Medical Association, Dallas, Texas, April, 1926.

THE TREATMENT OF THROMBO-ANGIITIS OBLITERANS

BY INTRAVENOUS INJECTION OF HYPERTONIC SALT SOLUTION: PRELIMINARY REPORT *

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Nothing very positive can be stated as regards the etiology of the peculiar disease that was studied by Buerger and called by him thrombo-angiitis obliterans, and no satisfactory explanation has as yet been given for the peculiar distribution of the disease. It is our belief that some hereditary transmitted defect, probably sex-linked in character, plays an important part in its causation. Whether the abnormality is primarily one of the blood, of the blood vessels, of the sympathetic nervous system or of the glands of internal secretion, is yet to be determined. There are some facts that point to a possible involvement of any one of these four systems. The discovery of the real nature of this disease is of great importance if a rational therapy is ever to be evolved, and studies along these lines are being carried out in the special clinic established for the treatment of this group of patients, in the outpatient department of Mount Sinai Hospital.

Spontaneous remissions are frequent, and therefore proof of successful treatment is difficult to establish. The pain will often stop of itself; less frequently the ulcers heal without treatment, and occasionally the formation of collateral vascular channels or the reopening of occluded vessels will occur spontaneously. If it were possible to determine that in all the patients amputation of the affected limb is inevitable sooner or later, the ability to save the extremities of these patients would be satisfactory and conclusive evidence of the success of a form of treatment. A review of the clinical histories of the large number of patients who have been studied and treated in Mount Sinai Hospital during the last fifteen years shows definitely that amputation of one limb was performed within a period of five years from the onset of symptoms in a large majority of cases. If, therefore, the greater number of patients who have been subjected to a particular form of treatment did not require amputation within a period of five years from the beginning of treatment, the value of the therapeutic method used would be indubitable.

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* From the Surgical Service of Mount Sinai Hospital.

* In view of the fact that a better method is now available, the injection of the posterior tibial nerve with alcohol, as advocated in 1922, has been completely abandoned and should not be used in the treatment of these cases

For over three years I have employed frequently repeated intravenous injections of hypertonic salt solution as a method of treatment of thrombo-angiitis obliterans, and the results appear of sufficient value to justify a preliminary report. Although two or three more years will have to elapse before the measure of success in preserving the extremities of the first fifty patients treated can be reported on, the beneficial results appear so definite that attention should be called to a simple, although not entirely original, method of treatment.

The administration of fluids to patients with thrombo-angiitis obliterans, whether subcutaneously, as first suggested by Koga in 1913, intravenously, or by duodenal tube, as carried out by later writers, has been followed by improvement in some of the patients. Intravenous injections of hypertonic citrate solution have been used with benefit, and the good results were believed to be due to the citrate itself. I have employed hypertonic sodium chloride solution for the injections, and only in this respect is there any originality in the method of treatment. Sodium chloride was selected for the hypertonic solution because it is the salt to which the body is accustomed, and because 15 Gm. can be administered without danger of toxicity. The solution is prepared in freshly distilled water, filtered, and immediately sterilized. At the present time, 5 per cent sodium chloride is used, 150 cc. for the first injection and 300 cc. for all subsequent injections. The injections are at first given three times a week, later, twice a week, and the length of intervals further increased as the patient improves. The injection is given into a superficial vein in the usual manner by the gravity method; the fluid is allowed to run into the vein slowly during ten minutes, and the patient is kept flat on his back during this period. If care is taken, the superficial veins will not be injured or become thrombosed, so that the same vein can be punctured again and again. If the solution has been properly made, chills or fever should rarely, if ever, follow the injection. I have given or supervised the giving of more than 2,500 injections, without any serious accident or reaction.

No other means of treatment has been regularly employed in the cases that we have treated. A certain number of patients received potassium iodide in the usual doses; some at their own suggestions continued baking and hot baths, and in two, local stimulative treatment of an ulcer with the roentgen ray seemed of value. All patients were urged to drink large quantities of water. The patients who continue to smoke frequently do not improve, and although we do not know the explanation of this phenomenon we have strictly forbidden the use of tobacco. It is exceedingly difficult to make the patients stop smoking, and it is only by repeated warnings and constant admonition that it can be accomplished.

During the injection, the blood volume is increased and the patients often state that they feel warm; the face becomes flushed and the superficial veins engorged. They often complain of thirst. The excretion of the 15 Gm. of sodium chloride injected takes place through the urine within forty-eight hours—approximately two thirds of the salt being excreted the first day, and one third the second day. The administration of hypertonic salt solution produces a certain amount of blood destruction. A slight amount of urobilin may appear in the urine, and a reduction in hemoglobin and red blood cell count will occur. As the majority of patients with thrombo-angiitis obliterans have a high hemoglobin and red cell count, a slight blood destruction is of no serious consequence. No symptoms of anemia have ever been produced even in patients who have been treated for a very long time; but if a mild anemia should occur, the injections should be stopped for a time, or diminished. No injury to the heart or to the kidneys has ever been seen, in spite of prolonged treatment in many cases. It is advisable to examine the urine and to repeat the blood count once a month to follow any changes that may occur. On theoretical grounds, it would seem that the repeated increase in the blood volume, necessarily stretching the vascular system, is responsible for the improved circulation and the development of the collateral blood supply that results. Another possible factor is the dilution of the blood with resulting decrease of viscosity.

Since February, 1923, more than 2,500 injections of hypertonic salt solution have been given to sixty-six patients. The accompanying table gives the results.

Results of Injections of Hypertonic Salt Solution

Improved	46
Unimproved or too early to judge result	14
Amputations necessary	6
Total	66

Improvement may be noted immediately, but more frequently not until at least a few weeks have elapsed. In many cases treatment must be continued for several months before definite evidence of improvement appears. The first subjective evidences of benefit are usually the increase of warmth in the extremities, with a diminution of pain. Objectively, the increase in the temperature of the extremity and the growth of new nails are first seen, then healing of an ulcer, if one is present, and finally the development of pulsation in previously occluded or collateral vessels. In addition, a gain of weight and improvement in the patient's general health was also noted. The healing of ulcers has been the usual rule in nearly all of the cases listed as "improved," although in a few cases from eight to ten months of treatment were necessary. In about one third of the patients who have been treated for over a year, a return of pulsation in the previously obliterated or in a collateral vessel has been found. When a patient has been restored to good health, the intervals between treatments have been lengthened to once a month and less. No patient has been discharged as cured, as it was felt that this would be unsafe; but no patients who have been kept under observation in this way have had a recurrence of symptoms. The best general evidence of the value of the treatment will be seen from the statement that the majority of the patients, many of whom have been unable to work from periods of from six months to three years, were able to return to work and were restored to economic usefulness. The treatment must sometimes be continued for months.

In some instances the treatment is without results, and some of the failures have been in advanced cases in which gangrene had already set in. Even in these patients, however, the treatment has sometimes proved of value. In the last four of these patients, treatment for at least two months had been given before amputation became imperative. In all of these, amputation at the middle of the leg was performed and a successful result was obtained. It scarcely needs to be stated that when amputation becomes inevitable it is important to give the patient a stump below the knee if at all possible. While amputations below the knee have occasionally been successful in cases of thrombo-angiitis obliterans in which treatment has not been given, this is certainly the exception rather than the rule, as will be apparent to any one who sees a large number of these crippled men. Four consecutive successful amputations at the middle of the leg are not many, and it is far from my desire to claim that all such amputations will meet with equal success. The fact is recorded as possible evidence of the value of the saline treatment administered to these patients, but only further experience can demonstrate whether this was not merely a coincidence.

SUMMARY AND CONCLUSIONS

1. Repeated intravenous injections of hypertonic salt solution have been used in the treatment of sixty-six cases of thrombo-angiitis obliterans.
2. Improvements have resulted in the majority of patients, those noted being cessation of pain, increased temperature of the extremity, growth of the nails, healing of ulcers, and reopening of obliterated vessels.
3. No dangerous reactions or untoward results of any kind have been noted in more than 2,500 injections.
4. Four consecutive successful amputations below the knee have been done in four advanced cases after preliminary saline treatment.
5. If begun before the disease is too far advanced, treatment of thrombo-angiitis obliterans by repeated injections of hypertonic sodium chloride solution will check the progress of the disease and will restore the patients to health and usefulness in the majority of instances.

55 East Eighty-Sixth Street.

CALCIUM ABSORPTION FROM THE INTESTINAL TRACT IN HUMAN SUBJECTS

AN EXPERIMENTAL STUDY *

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AND
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There are numerous reports in the literature of the therapeutic value of calcium salts when given by mouth, more particularly in such conditions as the hyperesthesias and hypersusceptibilities; but their authors have never shown any convincing proof in the way of laboratory findings. Some assert that they have obtained slight elevations in the blood calcium level, but the blood changes reported were very small, and in no case have the blood analyses shown a variation great enough to indicate definitely that they were not due to experimental error.

The absorption of calcium from the intestinal tract has been the subject of much discussion and the objective of a vast amount of research. Many investigators have denied that calcium is stored in the tissues or even absorbed from the intestinal tract. A great number of experiments have been reported in which animals were given large amounts of calcium salts orally and did not show retention of calcium in the tissues, or a rise in the blood calcium level. Meigs, Blatherwick and Carey[1] have reported that there was a very slight increase in the plasma calcium after feeding calcium chloride to cattle, but the difference was within the limits of experimental error. Denis and Corley[2] found no elevation of serum calcium in rabbits fed daily doses of calcium chloride and calcium lactate, and no higher calcium content of the tissues than that shown in control animals. Halverson, Mohler and Bergein,[3] and Clark,[4] have published work showing no increase in the calcium content of blood serum in animals given a calcium rich diet, or calcium with their food. Denis and Minot[5] have reported that the blood calcium of normal human subjects was not elevated by the daily ingestion of 6 Gm. of calcium lactate for a period of ten days. Salvesen, Hastings and McIntosh[6] found no increase in blood calcium in men given 10 Gm. of calcium lactate and 13.5 and 15 Gm. of calcium chloride daily for periods of from four to nine days; also in dogs, given from 15 to 20 Gm. of calcium chloride and calcium lactate daily for from two to four days, except a 20 per cent increase in the serum of one dog.

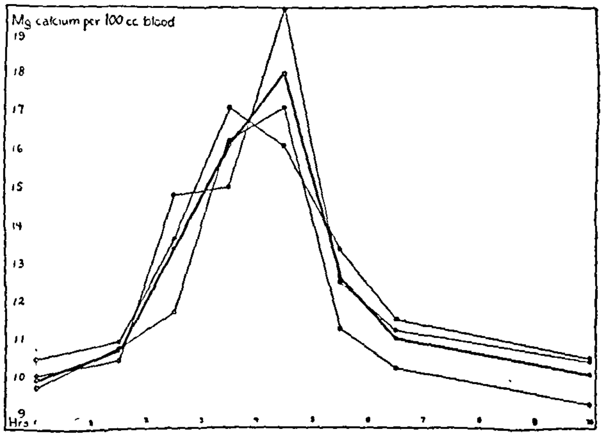

Chart 1.—Hourly blood calcium concentration in three subjects given 20 Gm. of calcium lactate by mouth: The heavier line indicates the average of the three curves.

A perusal of the foregoing papers reveals that single isolated calcium estimations were made in every case and that the relationship of blood calcium concentration to time of ingestion was not considered, the analyses being performed usually twenty-four hours, or several days, after the last calcium ingestion. This probably accounts for a failure to find any change in the blood calcium concentration by these investigators.

Recently Hjort,[7] examining the blood hourly or at two hour intervals, has shown that the normal blood calcium is elevated in dogs by giving calcium salts orally. When calcium salts were given in amounts equivalent to 0.2727 Gm. of the oxide per kilogram of body weight, this author found the following elevations of the normal serum calcium: with calcium lactate, from 17.4 to 48.7 per cent; with calcium chloride, 32.1

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* From the Department of Biochemistry, George Washington University Medical School.

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per cent; with calcium glycerophosphate, 8.26 and 9.8 per cent; with calcium carbonate, 7.8 per cent.

Because of the interest in the subject of calcium absorption, and in order to obtain evidence relating to the therapeutic administration of calcium salts, the following experiments on human subjects were carried out. The method used for the estimation of calcium was the colorimetric procedure, which we[8] developed, and with which we have had considerable experience. Most of the determinations on any one subject were carried out simultaneously and read against the same standard, and they therefore represent accurate relationships. The subjects were medical students showing no clinical evidences of disturbed calcium metabolism.

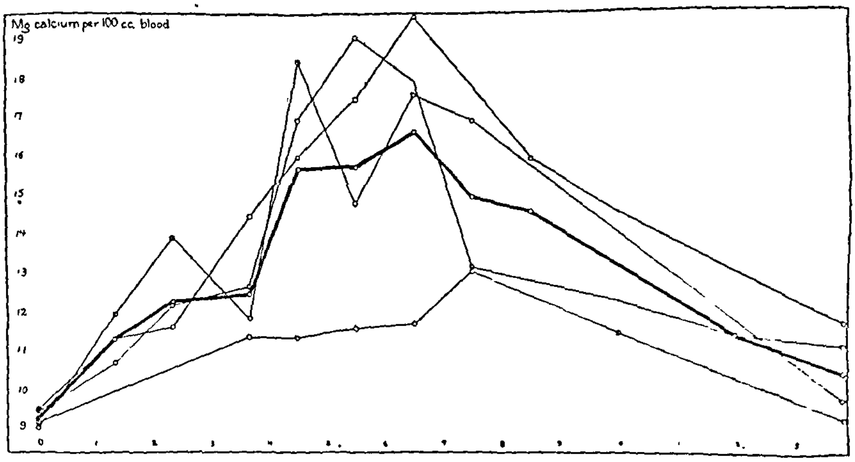

Chart 2.—Hourly blood calcium concentration in four subjects given 5 Gm of calcium lactate by mouth: The heavier line indicates the average of the four curves

REPORT OF EXPERIMENTS

Experiment 1.—This was a repetition of the work of other authors. Two subjects were used. Blood calcium estimations were made on three successive days on samples of blood drawn before breakfast, these values being obtained to establish the individual normals as controls. Five grams of calcium lactate was then given orally on each of the five days following the control period. Blood was drawn on the sixth day before breakfast and analyzed for calcium. There was no increase in the blood calcium concentration, a result that coincided with the observations of Denis and Minot.[5] These findings are summarized in table 1.

Table 1.—*Summary of Blood Calcium Estimations in Experiment 1*

Test	Subject A, Mg. of Calcium per 100 Cc. of Blood	Subject B, Mg. of Calcium per 100 Cc. of Blood
Normal, first day	9.42	9.78
Normal, second day	9.47	9.82
Normal, third day	9.43	9.78
Average normal	9.44	9.79
After 5 Gm. a day oral administration of calcium lactate	9.47	9.75

Experiment 2.—Three subjects were given 20 Gm. of calcium lactate orally in approximately 300 cc. of water. A control value was obtained previous to ingestion, and estimations were made on samples of blood drawn hourly for seven hours. The results are shown in chart 1. The curves show maximum elevations of the normal blood calcium of 64, 76 and 102 per cent between the third and fifth hours following ingestion. The hourly average curve for the three subjects shows a maximum elevation of 81 per cent between the fourth and fifth hours after ingestion, and returns to normal by the tenth hour.

Experiment 3.—The normal blood calcium was obtained on four subjects, who were then given 5 Gm. of calcium lactate by mouth in 300 cc. of water. Calcium estimations were performed on samples of blood taken hourly for eight hours, and then on samples taken ten, fourteen and twenty-four hours after ingestion. The results are shown in chart 2. The curves are less regular than in the 20 Gm. ingestion experiment. Maximum elevations of 43, 104, 105 and 108 per cent were obtained between the fourth and the seventh hours. The hourly average curve reaches a maximum elevation of 80 per cent above normal between the sixth and seventh hours, and remains elevated much longer in this experiment than in experiment 2, returning to normal approximately fourteen hours after ingestion of the calcium salt.

Experiment 4.—The normal blood calcium was determined for three subjects, after which they were given 2 Gm. doses of calcium lactate. Samples of blood were drawn four hours after ingestion, no food being taken in the interim, and analyzed for calcium. After the fourth hour, blood was drawn and analyzed for five consecutive hours, and, since at the end of this time the blood calcium concentration of all the subjects had returned to normal, no further samples were taken. The results are shown in chart 3. The curves are smooth, and show striking similarity. Maximum elevations of 43, 53 and 54 per cent were obtained at approximately the sixth hour after ingestion. The hourly average curve exhibits a maximal elevation of 49 per cent at the sixth hour, and returns to normal eight hours after ingestion.

COMMENT

These experiments show that calcium is absorbed from the intestinal tract just like any other diffusible substance. There is a rise in the blood calcium concentration following the ingestion of calcium salts, which varies according to the size of the dose, but is not strictly proportional to the amount taken. The average curves for the 2, 5 and 20 Gm. ingestion experiments (chart 4) show that the first appearance of calcium in the blood is favored by large dosage, the peak of the curves occurring in the order of size of dosage in each experiment. The return of the blood calcium concentration to normal is not proportional to dosage, however, which is a very important point, therapeutically. The 5 Gm. administration maintained an elevation above 12 mg. of blood calcium per hundred cubic centimeters for nine hours, while the 20 Gm. dose maintained the

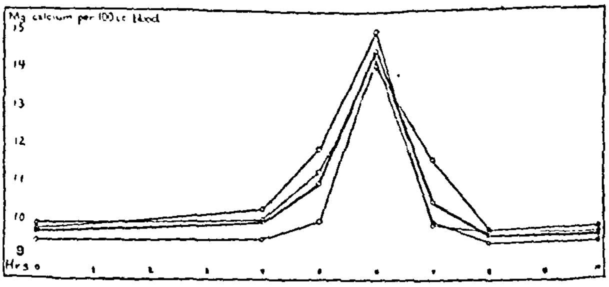

Chart 3.—Hourly blood calcium concentration in three subjects given 2 Gm. of calcium lactate by mouth: The heavier line indicates the average of the three curves.

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same elevation less than four hours, and the 2 Gm. dosage about one and one-half hours. The only explanation we suggest for the more rapid return of the blood calcium concentration to normal in the instance of the 20 Gm. experiments is possibly an increased irritation of the intestinal mucosa by the larger amount. These findings show that optimal absorption is determined by two opposing factors, mass action of the dose, and, possibly, irritant action of the salt, and that optimal absorption will be the resultant of these two opposing influences. Our experiments indicate that 5 Gm. of calcium lactate represents approximately the optimal dose when this salt is given by mouth. Below this amount there is insufficient mass action, and above this quantity some unknown influence, possibly irritation of the intestinal mucosa, depresses absorption.

SUMMARY

Calcium lactate administered orally to ten human subjects showed elevations of the blood calcium level as follows: Twenty gram doses gave an average maximum elevation of 81 per cent between the fourth and fifth hours following administration, and a sustained elevation above normal for approximately four hours. Five gram doses gave an average maximum elevation of 80 per cent between the sixth and seventh hours following ingestion, and maintained an elevation above normal for approximately nine hours. Two grams gave an average maximum elevation of 41 per cent at the sixth hour following ingestion and a sustained elevation above normal for one and one-half hours. These findings are in disagreement with the work of many investigators, who have asserted that the blood calcium concentration cannot be increased by the oral administration of calcium salts, and they confirm the work of Hjort,[7] who found definite elevations of the blood calcium in dogs given calcium salts by mouth. Five grams appears to be the dosage of calcium lactate that will give optimal results therapeutically.

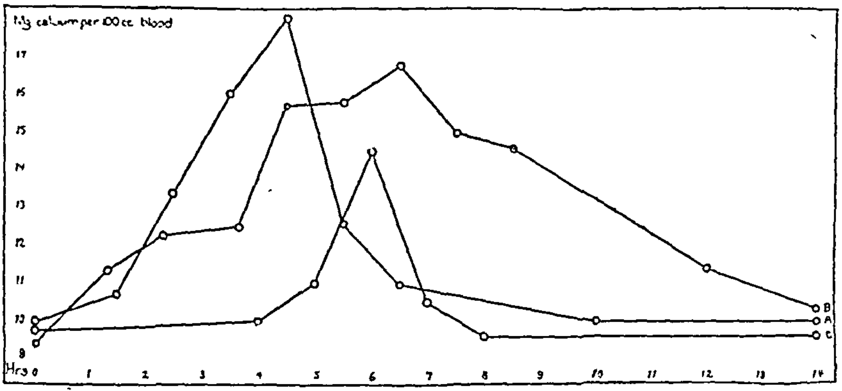

Chart 4.—Average curves for the blood calcium concentration in the three ingestion experiments, drawn on the same scale: *A*, 20 Gm. average curve; *B*, 5 Gm. average curve; *C*, 2 Gm average curve.

Source of Epinephrine.—Epinephrine is probably manufactured as a by-product of tyrosine, as is suggested by the presence of the oxyphenyl group in the chemical composition of the hormone. Tyrosine is a by-product of protein catabolism. If there is not sufficient ingestion of protein to allow of tyrosine and amino-acid derivatives being produced, the suprarenal bodies have not the materials from which to make epinephrine, except from their "tissue protein."—Dickson, Wanless: Endocrine Basis of Pernicious Vomiting in Pregnancy, *Practitioner*, May, 1926.

THE CAUTERY TREATMENT OF CHRONIC ENDOCERVICITIS

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Chronic endocervicitis, with or without erosion, is a very common condition. It is especially frequent among married women who have had one or more pregnancies, but may be found at times in patients with unruptured hymen. It is worthy of note that McGrath[1] found cervical disease in 38 per cent of the single women and 80 per cent of the married women in a series of 1,000 consecutive patients at the Cornell clinic who had a retrodisplacement of the uterus.

Chronic endocervicitis is always due to the presence of bacteria even though trauma, whether chemical or mechanical, may have acted as a predisposing cause. Microscopic studies from different portions of the cervix indicate that the glands near the external os are commonly diseased, while those near the internal os may appear normal. In the more recent cases, it is probable that the glands near the internal os need not be considered in the treatment. Winter,[2] in 1888, demonstrated that the endometrium of the uterus is normally free from bacteria, and this was confirmed by Curtis,[3] in 1918. Stroganoff[4] and Menge,[5] in 1895, working independently, found that bacteria are not normally present above the external os. Curtis,[6] in his last paper, states that his bacteriologic studies indicate that approximately 30 per cent of all patients with chronic purulent leukorrhea are carriers of virulent streptococci. He believes that while these organisms may account for spontaneous postpartum and postoperative infections, they should not be overemphasized as chronic foci capable of causing arthritis and other serious systemic disturbances. Laura Moench,[7] on the other hand, working with Rosenow at the Mayo Clinic, has demonstrated that streptococci grown from the chronically infected cervical glands of patients suffering from arthritis are culturally identical with the anaerobic streptococci grown from other foci of infection in these patients, and that experimentally they produce joint lesions in rabbits.

Cervical erosions are a frequent complication of chronic endocervicitis. They are an indication of the chronic irritation, and in the light of our present knowledge it seems probable that long continued irritation favors the development of cancer. A differential

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diagnosis between early carcinoma and chronic endocervicitis with erosion may be impossible without a microscopic examination.

Every woman patient who complains of pelvic symptoms should have a speculum examination. Many physicians are overlooking more or less serious cervical disease through neglect of this simple procedure. Endocervicitis is frequently a factor in the production of one or more of the following complaints: dysmenorrhea, sterility, pelvic pain, dyspareunia, backache, menorrhagia or metrorrhagia, nervousness or general debility. When present, it should be cured as a part of the medical treatment.

The recognition that chronic endocervicitis is something of a menace to the patient's health has led to renewed efforts to cure it if possible without the surgical removal of the cervix. A high amputation removes the diseased tissue, but should be avoided if possible during the child-bearing period. The results following low amputation are frequently more or less unsatisfactory. The Sturmdorf conical excision of the cervical glands is undoubtedly the most satisfactory surgical treatment of this condition, but it means an operation and a hospital bill. Multiple scarification and the use of iodized phenol (carbolic acid) or local applications with silver nitrate, tincture of iodine and zinc sulphate require a large number of office visits, and the healing is often incomplete. The end-results with radium have not been very satisfactory, as the effects could not be limited to the cervical mucosa, and the bacteria were not destroyed.

Heat in various forms has been used successfully in the treatment of endocervicitis. Hunner's[8] use of the Paquelin cautery and the later use of the heavier electric cautery were possible only with the patient under an anesthetic, and again meant hospital treatment. Dickinson[9] deserves great credit for demonstrating and bringing to the attention of the profession the possibility of using the nasal type cautery tips as an office procedure in the treatment of various cervical conditions. Following his report in 1921, I began a rather cautious test of this method. While the early use in the office was not entirely satisfactory, largely because of timidity and a noisy transformer, later, with a proper equipment and more experience, the results improved and confidence in the method was established.

The technic used in our office is briefly as follows: After a suitable bivalve speculum has been inserted, the mucous discharge is thoroughly removed with cotton balls and applicators. A suitable light weight cautery tip, preferably from one-half to three-fourths inches (13 to 19 cm.) long, is placed firmly against the tissue to be destroyed and the current turned on by pressing the button on the cautery handle. As a sufficient depth is reached, the tip is gradually moved so as to make a line through the diseased tissue. In many cases it is necessary to cauterize only the glands near the external os and the eroded area; in others, the disease extends to the internal os. If at any time the patient complains of discomfort, the contact button is released and the current not applied again until she is comfortable. This process is continued until a sufficient number of cautery lines have been made. Nabothian cysts are destroyed in a similar manner after they have been punctured with the heated tip. An effort is made to reach the depth of the glands so as to destroy a part of the diseased tissue and all the bacteria. The lines are at least three-sixteenths inch apart, so that only a part of the cervical glands are destroyed. This permits regeneration of fairly normal glands. If the patient is very nervous or conscious of considerable pain, we administer nitrous oxide-oxygen analgesia or anesthesia in the office. Only a few patients are now being sent into the hospital for cautery treatment. In many ways the analgesia is more satisfactory than complete anesthesia for the office patient. She can administer it herself according to the technic formerly described for self administration during normal labor.

Since making our first report,[10] in December, 1924, an additional 180 patients, making a total of 317, have been treated by this method by my associate, Dr. Cron, and myself. A considerable number of these required two treatments, a few, three; and one had four before healing was complete and permanent. One hundred and nine patients delivered by us have been cauterized before being discharged. We have both observed that satisfactory healing occurs more promptly in patients cauterized within eight weeks after delivery. Twenty-six patients are known to have become pregnant since the cautery treatment. Of these, five had early abortions and two miscarried during the sixth month, but all seven had a history of one or more previous abortions. Six patients were pregnant at the time of treatment and two of these aborted, one within forty-eight hours and the other six weeks later. Cautery treatment is used only during pregnancy for bleeding polypoid areas, and is limited to the region of the external os. A few cases of long continued sterility have apparently been cured by the cautery treatment.

Following a cautery treatment, there is a marked increase in the discharge for about two weeks, and the patient is warned to wear a napkin. She is told that the next period may be more profuse than normal. A few patients have had excessive bleeding and have required a pack for a few hours. The patient is instructed to keep clean by frequent washing of the external genitalia. Douches are of questionable value, and as a rule women are warned against their use. We have found it advisable to clean out the vagina and cervix every week or ten days and to paint the cauterized area with mercurochrome-220 soluble or compound tincture of benzoin until healing is complete. A second cautery treatment is rarely indicated under four weeks, and very few require any more. Failure to clean out the cervix during the process of healing may result in a stricture of the external os. We have had to dilate the cervix in four patients who were not under observation following repeated cautery treatment. The cautery should never be used during the acute stage of a cervical infection. Patients with retroflexion should not be cauterized until the uterus has been replaced and a proper pessary inserted. Subacute salpingitis contraindicates the cautery. Sex trauma should be avoided for at least two weeks after the treatment, and in extensive cases longer. The cervix should never be cauterized during an operation in which the uterosacral ligaments are to be shortened. Syphilis of the cervix contraindicates the cautery.

It is our present practice to have puerperal patients that show any sign of cervical disease on the examination five or six weeks after delivery return in two or three weeks for another inspection and cautery treatment, if it seems indicated. This prophylactic measure may prevent more serious disease of the cervix in the future and is recommended.

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[8] Hunner, G. L.: The Treatment of Leukorrhea with the Actual Cautery, J. A. M. A. **46**: 191 (Jan. 20) 1906.

[9] Dickinson, R. L.: Endocervicitis and Eversion and the Nasal Cautery Tip, Am. J. Obst. & Gynec. **2**: 600 (Dec.) 1921.

[10] Davis, C. H.: Chronic Endocervicitis, Surg. Gynec. Obst. **40**: 568 (April) 1925

This treatment is not considered a cure-all, but our experience with it has been so favorable that we rarely advise a cervical operation unless other surgery is needed. If a satisfactory result is not obtained, one may still resort to the Sturmdorf excision, tracheolorrhaphy or some type of amputation. We have operated on the cervix of only four patients who were previously treated with the cautery. Three were in the hospital for other surgery, and the cervix was repaired or amputated as an incident in the operation. One was sent in for a Sturmdorf excision about seven weeks after a rather superficial cautery treatment because of the patient's impatience and desire for the quickest possible relief. She was cured of her cervical discharge, but after a year is still sterile. This is the most satisfactory gynecologic treatment possible in an office, and I know of no other single procedure that has given such gratifying results.

141 Wisconsin Street.

CARBON MONOXIDE POISONING FOLLOWING ETHYLENE ANESTHESIA*

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AND
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Recently, serious complications following ethylene anesthesia were encountered, with at least one fatality; another case which, in the light of subsequent events, could be ascribed to the same cause, and a third case in which the patient was dangerously asphyxiated.

The clinical and laboratory findings point to carbon monoxide as the causative factor. We are not aware that any previous reference has been made to carbon monoxide as a source of difficulty in the use of ethylene in anesthesia. Therefore, this preliminary report is made for the purpose of calling attention to this grave possibility, and the necessity for more careful control of the purity of the ethylene used.

CLINICAL FINDINGS

Case 1.—A white man, aged 39, of average weight and medium height, was admitted to the hospital suffering from a compound, comminuted fracture of the left leg; laceration of the forehead, with possible fracture of the frontal bone; and extensive contusion of the left shoulder. The patient was in profound shock at the time of entering the hospital, but, under the usual methods of treatment, reacted favorably and, forty-eight hours after admission, was taken to the operating room for the purpose of reducing the fracture of the leg by the open method.

Ethylene anesthesia was used and was practically uneventful until after the operation was completed and the anesthetic was about to be withdrawn, when it was noted that the pulse began to thin out and become imperceptible. The respirations became slower and shallow, the anesthetic was withdrawn and forced inhalations of oxygen, with about 10 per cent carbon dioxide, were given as a restorative. The pulse and respirations suddenly stopped about five minutes after the foregoing symptoms were noted. The period of anesthesia was fifty minutes.

The pupil, which was moderately contracted, and the reflex sluggishly active, suddenly dilated at the same time; the patient was cyanotic, the ears being rather pink. Artificial respiration with inhalations of carbon dioxide and oxygen continued for about ten minutes without any favorable response. Postmortem pallor appeared in the skin, and efforts at resuscitation were stopped.

On account of the fact that symptoms of collapse did not begin to appear until the operation was almost concluded, that there had been extensive comminution of the bone at the site of fracture, and that the symptoms of collapse were so sudden and came on without warning, the anesthetic was not considered an exciting factor, but a diagnosis of probable fat embolism was made as the cause of death. It is felt that this diagnosis should be revised in view of the experience in cases 2 and 3, in which the patients were anesthetized from the same lot of gas.

Case 2.—A man, aged 25, sustained a fracture of the external *malleolus, the injury occurring about ten days previous to* the operation, which consisted of reduction of the fractured malleolus.

Ethylene anesthesia was used. The patient was somewhat nervous; induction was stormy, with considerable secondary excitement. The pulse ranged between 100 and 120. No marked complications of anesthesia were evident beyond the undue excitement until the operation was finished and the anesthetic had been withdrawn. The period of anesthesia was twenty-five minutes. At the conclusion of the anesthesia, it was noticed that the patient did not revive promptly on administration of carbon dioxide and oxygen, but the respirations were quite shallow and the patient cyanosed. The patient was held in the operating room for observation for two or three minutes, when it was noticed that while there was still some tendency toward cyanosis, respirations were more free and regular, and he was returned to the ward.

Case 3.—A young adult was anesthetized with ethylene. The induction was somewhat stormy; the patient vomited after ten minutes of anesthesia, and then settled down to an apparently uneventful course. After twenty minutes, it was noticed that the pulse was becoming thin and thready and had risen to 135 beats a minute. Respiration was shallow and slow. The anesthetic was immediately withdrawn, and resuscitation measures—inhalations of pure oxygen with 10 per cent carbon dioxide, were substituted. The patient had about five voluntary respirations of this mixture, and suddenly ceased breathing, the pulse stopping simultaneously and the pupil immediately dilating. Forced artificial respirations with carbon dioxide and oxygen were continued for about ten minutes without favorable result.

In this case, a peculiar cherry red color was noticed in the skin of the entire body, especially on the chest, which confirmed the suspicions already engendered that there might be some toxic agent in the anesthetic. After ten minutes of artificial respiration, the cherry red started to fade, and postmortem pallor and lividity began to appear. Artificial respiration was then stopped.

Fifty cubic centimeters of blood was immediately withdrawn from the heart chamber of patient 3, and the same amount was taken from the vein of patient 2, who had been sent down to the ward a half hour previous. These specimens were sent to the hospital laboratory, and tests for carbon monoxide were positive, as given in the laboratory report.

LABORATORY FINDINGS

Results of Examination of the Blood.—On dilution of the blood with water and on comparison in test tubes with a similar dilution of normal blood, a definite cherry red, characteristic of carbon monoxide hemoglobin, was observed. The blood from both patients gave strong positive reactions for carbon monoxide hemoglobin with the following reagents: sodium hydroxide, potassium ferrocyanide, tannic acid, phenol (carbolic acid), phenylhydrazine, and phosphotungstic acid. Spectroscopically, the presence of carbon monoxide was shown by the behavior of the blood toward reducing agents. The quantitative saturation of the blood with carbon monoxi was determined by means of the colorimetric method developed by the United States Bureau of Mines. The blood from patient 1 showed 50 per cent, and from patient 2, 60 per cent saturation with carbon monoxide.

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* From the surgical and laboratory departments, St. Francis Hospital.

Examination of Ethylene for Carbon Monoxide.—The cylinder of ethylene used when delivered to the laboratory was practically empty; therefore, an adequate amount for thorough examination was not available. Bubbling about 3 or 4 cc. of the gas through a solution of hemoglobin failed to show the presence of carbon monoxide. The cylinder was submitted to the Mine Safety Appliance Company of Pittsburgh, which evacuated the residual gas and, using a combustion chamber, found a carbon monoxide concentration of 0.7 per cent.

Two other fresh stock cylinders of ethylene, labeled 1 and 2, were examined for carbon monoxide, with positive results. No. 1 cylinder bore the same manufacturer's serial date as the cylinder used in the cases reported; no. 2 cylinder, a different serial date.

A guinea-pig was placed in a small respiration chamber, which was attached to the apparatus used in administering the ethylene to the two patients. In this manner anesthesia was induced in the guinea-pig, with the same ethylene-oxygen mixture as administered in the cases reported. The anesthesia was maintained for about one hour. With cylinder 1, the guinea-pig died after one hour of anesthesia. Blood was withdrawn from the heart, and the qualitative tests used on the patients' blood gave strongly positive reactions for carbon monoxide hemoglobin. Quantitative examination showed 70 per cent saturation with carbon monoxide. Furthermore, by bubbling the ethylene directly from the cylinder through normal human blood, typical tests for carbon monoxide hemoglobin were obtained.

Cylinder 2 was used, and the guinea-pig, still alive after one hour of anesthesia, was removed from the respiration chamber, and blood was withdrawn from the heart. This blood gave the typical reactions for carbon monoxide hemoglobin and quantitatively about 50 per cent saturation with carbon monoxide.

COMMENT

The apparatus used in the three cases is an approved type wherein the gases are bubbled through water and mixed in a common chamber with a sight-feed control. The usual mixture is, approximately, from 15 to 20 per cent oxygen and from 80 to 85 per cent ethylene, with carbon dioxide added up to 5 per cent, as indicated by the depth and number of respirations of the patient. Nitrous oxide is used for purposes of induction only and is seldom continued more than three minutes.

The routine preanesthetic narcotic medication, consisting of one-fourth grain (16 mg.) of morphine, and 1/150 grain (0.4 mg.) of atropine given hypodermically one-half hour before operation was given in the first two cases, but in case 3, morphine was reduced to one-sixth grain (11 mg.) on account of the age and body weight, which was somewhat below the average.

The death of the first patient, as mentioned, was ascribed to possible fat embolism, but on account of the similarity of the symptoms between this case and the fatal third case, and also the fact that the gas was administered from the manufacturer's same serial number, it is felt that the first case should be regarded as an anesthetic fatality rather than due to embolism.

The second patient recovered.

In all three cases, the signs of collapse did not occur until the operation was practically over and the anesthetic was about to be withdrawn.

The clinical and laboratory findings point to carbon monoxide as the cause of the complications encountered in the cases reported. The possibility that ethylene combines with hemoglobin, forming a compound which simulates carbon monoxide in its reactions, was considered, but excluded on the basis of Luckhardt's observations, as well as our own.

Furthermore, we have considered the remote possibility that we might be dealing with some impurity in the ethylene other than carbon monoxide which combines with hemoglobin, forming a compound which reacts like carbon monoxide hemoglobin. We are not aware of any known substance of this nature. Such a substance, if it exists, would undoubtedly affect the respiratory function of the blood as does carbon monoxide and, therefore, have the same poisonous effect.

The whole problem is being further investigated in collaboration with the United States Bureau of Mines at Pittsburgh.

Clinical Notes, Suggestions, and New Instruments

DIABETES MELLITUS ASSOCIATED WITH STATUS LYMPHATICUS *

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A great many complications have been described as occurring in diabetes mellitus. Many of these complications may be regarded simply as coexisting conditions, while others seem to bear a definite, direct relationship to the disease itself. The following complication, which we have recently observed, probably belongs to the latter group and is apparently very unusual.

REPORT OF CASE

D. D., a girl, aged 11, who was admitted to the medical service of Bell Memorial Hospital, Oct. 22, 1925, at 7 a. m., and who died four hours later, had suffered from diabetes for approximately two years. During this time she had had a moderately severe form of the disease, but had been kept in good condition by dieting and insulin therapy. She had gained weight and grown in height at a satisfactory rate. In September, 1923, her height was 44½ inches (113 cm.) and her weight 44 pounds (20 Kg.); in May, 1925, her height was 48½ inches (123 cm.) and her weight, 48½ pounds (22 Kg.). There was a history of occasional attacks of asthma beginning in 1918, which were becoming increasingly infrequent.

The patient had not felt well for a day preceding her death, and in the afternoon vomited once and went to bed. Late that afternoon, she dressed and felt very much improved. She ate some dinner and afterward played with her playmates. In the evening, on going to bed, she appeared slightly abnormal but, following a dose of 15 units of insulin, she seemed normal and went to sleep. At 7 a. m., it was impossible to arouse her, and she was immediately brought to the hospital, with the clinical appearance of diabetic coma.

The child was unconscious, her temperature was 104.6, and her pulse was 140. The blood sugar was 645 mg. per hundred cubic centimeters, and the carbon dioxide tension was too low to be read accurately but was approximately 4.5 per cent by volume. The child's breathing was stertorous, becoming increasingly difficult, and she died without regaining consciousness in spite of the insulin and alkalis administered.

The necropsy findings showed edema of the lungs, some cloudy swelling, and fatty degeneration of the liver. The kidneys were normal. The thymus was unusually large, covering the entire surface of the pericardium anteriorly and weighing approximately 50 Gm. The pancreas showed grossly nothing abnormal. The kidneys were normal on gross inspection. There was a distinct enlargement of the abdominal lymph glands, especially those in the mesentery.

A microscopic section of a lymph node of the mesentery showed a chronic inflammatory reaction. The lymphoid tissue was broken up into lobules by heavy bands of fibrous tissue. The peripheral sinuses were dilated and contained leukocytes, mostly of the mononuclear type. There were groups of leukocytes in the surrounding fat tissue, and eosinophils also were present. A microscopic section of the thymus gland showed numerous Hassall's corpuscles, which were very large and showed some hyaline degeneration. There was marked endothelial cell hyperplasia, particularly in the medulla. A section through the pancreas showed no marked pathologic changes, except for striking diminution in the number of islands of Langerhans. Many sections through both the head and the tail of the pancreas were studied before any islands were seen. No definite evidence of regeneration of the islands of Langerhans was seen.

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* From the Departments of Internal Medicine and of Pathology, the University of Kansas School of Medicine.

The most striking features of the postmortem examination were the marked enlargement of the thymus, enlargement of the abdominal lymph glands, edema of the lungs, and the microscopic evidence of diminution of the islands of Langerhans in the pancreas. The size of the thymus, together with the lymphatic enlargement, is sufficient to justify the diagnosis of status lymphaticus associated with diabetes mellitus.

It would seem possible that status lymphaticus in this patient bore some definite relationship to the disease. There is much evidence of the relationship between diseases of the various glands of internal secretion. Although we have no knowledge regarding the physiologic action of the thymus, it probably bears some definite relationship to the endocrine system, of which the pancreas is an important member. Patients suffering from status lymphaticus have notoriously little resistance to disease or trauma. It is possible that the extremely rapid onset of coma in this patient may have been due to such lessened resistance. It is also a matter of interest that the patient had numerous blood examinations and a very large number of insulin injections without any bad effects from these slight traumas. The attacks of asthma from which the patient suffered were probably of the thymic type.

A CONVENIENT PILLAR RETRACTOR

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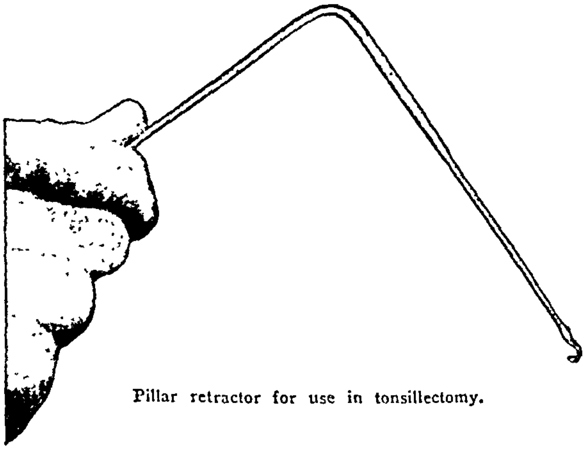
The pillar retractor in common use for tonsillectomy is unsatisfactory. Its straight handle many times brings the hand of the assistant who is wielding it directly into the line of the surgeon's vision, and, in any case, fills valuable space over the limited field of operation.



Pillar retractor for use in tonsillectomy.

Thus, the tonsillar fossa is not always satisfactorily exposed; bleeding points may remain undiscovered and unligated, and residual tabs of tonsillar tissue may be overlooked.

With these things in mind, I had the handle of a Hurd retractor bent to an angle of 90 degrees. This was done in a few minutes by an electric welder. The new instrument thus formed is much more satisfactory than the straight-handled one; with it, the assistant's hand keeps well to one side, out of the surgeon's line of vision and out of the way of his hands.

I have assisted and have been assisted with this new instrument many times; the invariably good results have demonstrated its superior convenience.

181 North Avenue

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

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(Continued from page 1692)

RECTAL ADMINISTRATION

Medicaments may be introduced into the rectum for one of three purposes: for systemic action, for local medication, and for exciting evacuation. As the function of the rectum is expulsion rather than retention, it is obvious that ordinarily special measures have to be employed to secure local medication of the colon (endocolonic action) or systemic medication by the colon (diacolonic action). There are, however, certain persons—those suffering from torpor recti (dyschezia of Hertz)—whose lower bowel is extraordinarily insensitive and retentive. In these, exciting evacuation may be more difficult than securing retention. With certain other patients the rectum is excessively irritable, as in various forms of proctitis, in which it may be very difficult to have medicaments retained. Hence it is a good rule to make a digital examination of the rectum before resorting to rectal medication. In this manner, excessive irritability that would require unusual care to secure retention of the medicament can usually be detected; or, if the rectum is filled with feces and the patient has no desire to defecate, torpor recti may be diagnosticated. A rectum distended with fecal matter should first be cleaned out by an evacuant enema before it is given the task of receiving medication.

As the rectum is capable of a considerable degree of absorptive activity, this form of systemic administration may be resorted to when the stomach is nonretentive on account of vomiting; likewise when it is desired to spare the stomach and intestine from the action of the drug, or to protect the drug from the action of the digestive ferments. With children, who will not take disagreeable tasting medicaments, or with the insane, who refuse to swallow, rectal administration may become an important recourse. Such a bitter substance as strychnine can best be given to children in suppository form, provided this method of administration is carried out gently, skilfully and tactfully. Unfortunately, quinine is too irritant to the colon to be relied on in the treatment of malaria. It will either be rejected or produce proctitis and colitis, its absorption in either case being interfered with. Sometimes anal fissure, inflamed hemorrhoids or cancer make rectal administration so painful as to be inexpedient unless demanded by the condition itself.

The dose by rectum is generally assumed to be double that by the stomach; but an exception has to be made in the case of certain alkaloids, such as strychnine and morphine, as well as phenol, which are reported to be more toxic when given by rectum than when administered by mouth. This is explained as due to circumvention of the destructive action of the liver on these substances, part of the burden of absorption being carried on through the inferior hemorrhoidal veins.

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* This is the twenty third of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

It is obvious that the technic will differ according to whether we aim at procuring evacuation of intestinal contents or at securing retention of the injected material. The term "enema" is applied to liquids used for either of these purposes; hence, we must distinguish between evacuant enemas and retention enemas. Ointments are introduced into the rectum chiefly for topical use. Enemas require some form of syringe, ointments a special tube for introduction. Suppositories, which are solids conveniently shaped for insertion into the rectum, require no apparatus. Hence they may be considered the preferable form of rectal administration, unless special reasons render other forms desirable.

SUPPOSITORIES

Suppositories, in the widest sense of the word, are conveniently shaped solid preparations intended for medication of mucous cavities other than the mouth. Thus there are urethral, vaginal, aural, nasal and rectal suppositories. As the others are rarely used, the name, unless otherwise specified, implies rectal suppositories. These are generally small, cone shaped bodies weighing, according to the U. S. Pharmacopeia, about 2 Gm. (French Codex, 3 Gm.) and certainly not exceeding 5 Gm., and of such consistency as to be solid at room temperature but fluid at the temperature of the body. For infants, they are generally made about half the size prescribed for adults (from 1 to 2.5 Gm.).

Evacuant Suppositories.—Though suppositories are less commonly employed for evacuation than for retention, there are at least two evacuant suppositories of sufficient importance to require mention. The official glycerin suppositories are simply glycerin (3 Gm.)[56] solidified by a small amount of hard soap (sodium stearate) so as to permit shaping it into form convenient for introduction into the rectum. They are obviously less troublesome to use than fluid glycerin, though probably also less efficient. A teaspoonful of pure glycerin, even less (from 2 to 5 cc.), injected into the rectum by means of a small syringe produces within one to fifteen minutes (average, eight) evacuation in perhaps 75 per cent of patients. The evacuation is due to local irritation of the rectal mucosa, caused partly by the hygroscopic and partly by the chemical nature of the glycerin. That it is not merely a question of osmosis is shown by the fact that other solutions of high osmotic tension, e. g., concentrated sodium sulphate solutions, placed into the rectum in a similar manner did not produce evacuation. Frequent repetition of this irritation may result in increased irritability of the rectum, which might be of advantage in torpor recti[57] but would be objectionable under other conditions. Glycerin suppositories are generally carried in stock by druggists, protected in some way against atmospheric moisture. This may be secured by wrapping them in tin foil, covering them with paraffin, or inserting each one in a small glass tube stoppered at both ends.

Soap suppositories, fashioned in the home from any kind of good soap, furnish a simple and convenient means for occasional stimulation to rectal evacuation, perhaps not used commonly enough. Very frequent use of these in any one patient might possibly be as objectionable as that of glycerin suppositories.

Retention Suppositories.—For suppositories that are to be retained, the most generally useful vehicle is oil of theobroma (cacao butter), a solid at ordinary room temperature whose melting point is about 93 F., just a little lower than the normal temperature of the human body. Glycerinated gelatin is sometimes used, especially for urethral suppositories, for which cacao butter is too brittle. Suppositories made with glycerinated gelatin usually weigh about twice as much as those made with oil of theobroma.

Because of their convenience to the patient, suppositories are the preferred rectal administration form whenever the medicine to be given meets the following essential requirements:

1. Liquids cannot be administered in suppository form, unless their dose does not exceed a few drops. In case it does slightly exceed this limit, e. g., solution of epinephrine, it is well to permit the addition of a little hydrous wool fat or to use glycerinated gelatin.
2. The dose must not be bulky. As a general rule, it should not exceed 20 per cent of the weight of the suppository. A maximal quantity of active ingredients would therefore be 1 Gm.; but usually not as much as this is prescribed. Bromide, iodide or salicylate is generally not considered suitable for suppository form.
3. The drug must not be very irritating, or it will not be retained.
4. The drug must not lower the melting point of cacao butter, as do all drugs which dissolve in it, as fixed and volatile oils, phenol, creosote or chloral hydrate. This could, if required, be rectified by the addition of wax (from 10 to 20 per cent), which raises the melting point of the mixture.

For the rectal administration of substances not suitable for suppository form, we have recourse to ointments or enemas. Drugs administered in suppository or ointment form are absorbed more slowly than when given in solution as an enema.

Suppositories are prepared in one of three ways: (1) by the cold process, (2) by melting, or (3) by filling suppository capsules.

In the cold process the active ingredients, sometimes made into a paste with a small quantity of solvent, are mixed and pounded together with the grated oil of theobroma, the mixture being worked actively with the pestle until the mass is homogeneous and plastic like a pill mass, a small quantity of expressed oil of almond being added, if necessary. Then the mass is either pressed into proper shape by means of a little machine made for the purpose or rolled into a cylinder, at first in the palm of the hand, and then on a smooth hard surface. The cylinder is then cut into the required number of equal parts. Finally, one end is pointed by being gently pressed into shape with the thumb and finger, and the other slightly rounded. There are simple machines on the market that shape a suppository mass more rapidly and uniformly than can be done by hand. Lycopodium is used as a conspergative in the same way as in making pills. If, during the process of preparation, the mass becomes brittle and begins to break, plasticity may be restored to it by working it in the hand; if, however, it is handled too much, the mass becomes too soft for satisfactory manipulation.

When melting is resorted to in the preparation of suppositories, the oil of theobroma is melted first; then the active ingredients are added, and the mixture is stirred until it just begins to congeal. It is then poured into molds chilled by ice. The chief disadvantage of this process is the tendency for the settling and uneven distribution of the active ingredients. This is minimized by closely following the directions given. Glycerinated gelatin suppositories, of course, can be made only by this process.

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[56] Manufacturers also place on the market glycerin suppositories of smaller size, suitable for infants.

[57] The graduated glycerin enema, suggested in this condition, is administered every morning after the patient has attempted to move the bowel. If he fails, 30 cc. of glycerin is injected. If this proves successful, the next morning a teaspoonful of glycerin is replaced by a teaspoonful of water, and on successive days the reduction in the strength of the glycerin is continued, until eventually 30 cc. of water without glycerin is used. By this time, the patient is generally cured.

Suppository capsules made of oil of theobroma or of gelatin are on the market. They are filled like other capsules. While they are less troublesome to prepare, they are less desirable than suppositories prepared in the other ways, as the medicament is not incorporated throughout the mass; hence the action is less uniform, and an irritant less diluted is more irritative.

The prescribing of suppositories does not differ much from the prescribing of pills, excepting that the excipient is always specified and its quantity generally as well. It may be laid down as a general principle that suppositories should be made as small as possible (2 Gm. or less) unless the medicament is irritative or caustic, when making the suppositories larger (not over 5 Gm.) will lessen the irritation and favor retention. In the subscription we merely state: "Mix and divide into —— suppositories," to which it is well to add "with the edges of the base rounded off." It is unnecessary to specify by what process they are to be made. Cacao butter suppositories are generally dispensed resting on cotton in pasteboard boxes. Glycerinated gelatin suppositories should be protected against dryness as well as moisture by being kept in an air tight container.

Directions to the Patient.—While the transcription usually merely indicates the frequency of administration, explicit verbal directions are given concerning the place and mode of introduction. The usual mode of introduction pointed end first has the disadvantage that, unless the base of the cone is pushed beyond the internal sphincter the whole suppository will be rejected. If, on the other hand, the base of the cone has rounded edges, and this—the larger end—inserted first, as suggested by Gilbert,[58] the suppository is virtually sucked into the rectum, as soon as its widest circumference has passed the sphincter, making it unnecessary to insert the introducing finger into the rectum, as is the case with the usual method. Anointing the cone with oil just before use facilitates its introduction. As cacao butter melts at a temperature above 30 C., suppositories should be kept in a cool place until they are used.

The following examples may serve to illustrate the prescribing of suppositories:

Anodyne suppositories composed of opium, 0.1 Gm., and extract of belladonna, 0.03 Gm., advantageously with the addition of cocaine hydrochloride, 0.01 Gm., are employed preceding a bowel evacuation in painful conditions of the rectum.

Sedative suppositories are at times useful in the treatment of vomiting; e. g., codeine phosphate, 0.06 Gm., or phenobarbital sodium, 0.25 Gm., or the two combined.

In prescribing astringent suppositories for bleeding hemorrhoids, 10 per cent of tannic acid should not be exceeded, or else the suppository becomes too irritative.

OINTMENTS FOR RECTAL ADMINISTRATION

Ointments may be applied to the rectum and anal margin by means of the anointed finger gently introduced through the sphincter. Or, better, the ointment may be dispensed in a collapsible tube, such as is used for holding artists' colors. To the end of this tube is fitted a cone shaped tip or a small piece of soft rubber tubing, which is inserted into the rectum. By pressure on the collapsible tube, the ointment may be forced into the canal without difficulty. A hollow cone, sometimes called "pile pipe," may be employed. Generally this is made of hard rubber, having multiple perforations near its tip, while its base is fitted with a sort of plunger which, on being screwed in, forces the ointment out of the holes at the top.

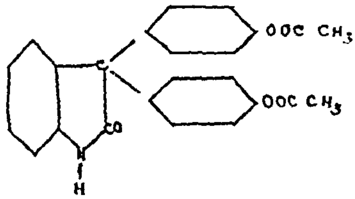
The following examples of rectal ointments may suffice: An ointment for local anesthesia of painful rectal ulcer may be composed of 5 per cent benzocaine in hydrous wool fat. As astringent ointment in treatment of bleeding hemorrhoids, the nutgall ointment (20 per cent) of the U. S. Pharmacopeia is at times useful.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ISACEN.—Diacetyldioxyphenylisatin —



The diacetyl derivative of dihydroxyphenylisatin. The compound resembles phenolphthalein in that the isatin group has somewhat the same general grouping as that of the phthaleins, unlike phenolphthalein, in isacen the two hydroxy radicals (of the two phenol groups) have been condensed with two acetyl groups

Actions and Uses —Isacen passes through the stomach unchanged when it reaches the intestine, a gradual splitting off of dioxyphenylisatin takes place under the influences of the alkaline contents of the intestine. The dioxyphenylisatin thus produced is stated to be nontoxic, not to be absorbed, and to be excreted entirely through the feces: neither dioxyphenylisatin nor the acetyl compound isacen appears in the urine after administration of isacen. Isacen acts as a laxative or purgative, depending on the dosage employed.

Dosage —As a laxative, 0 005 Gm.; in cases of obstinate constipation, from *0 015 to 0 02 Gm. Isacen is supplied in* the form of tablets only.

Manufactured by the Hoffmann LaRoche Chemical Works, New York. U S patent applied for U. S trademark 200,220

Isacen Tablets 0 005 Gm

Isacen is a white, crystalline, odorless, tasteless powder. It is insoluble in water and dilute hydrochloric acid, slightly soluble in alcohol, very slightly soluble in ether It melts at 241 to 242 C.

Boil 0 1 Gm of isacen with 3 cc of sodium hydroxide solution; cool, dilute to 10 cc. with water. on the addition of a few drops of potassium ferricyanide solution (1 in 10), a cherry red color results Boil 1 Gm of isacen with 10 cc of sodium hydroxide solution; cool, add an excess of diluted sulphuric acid; the odor of acetic acid develops Dissolve 1 Gm of isacen in 20 cc of glacial acetic acid and maintain at 100 C.; a clear solution results *(limit of dioxyphenylisatin)* Boil 1 Gm of isacen with 50 cc of distilled water, no odor develops Cool the solution, add sufficient water to restore the volume of 50 cc ; filter, and to 10 cc of the filtrate add a few drops of silver nitrate solution; no opalescence is produced immediately *(chloride)*. Transfer 2 Gm of isacen to a glass stoppered cylinder, add 50 cc. of distilled water, shake for five minutes and filter through paper To 25 cc. of the filtrate add one drop of phenolphthalein solution; on the addition of one drop of tenth normal sodium hydroxide solution, a pink color results *(limit of acid)*. Incinerate about 1 Gm accurately weighed. The ash should not be more than 0 5 per cent

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[58] Gilbert, A.: L'Art de prescrire, Paris, J. B Baillière et Fils, 1920.

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SATURDAY, JUNE 5, 1926

DIET AND HYPERTENSION IN RENAL INSUFFICIENCY

The kidneys are charged with the function of eliminating certain types of waste products, notably the end-products of protein metabolism, from the body. It may be assumed, therefore, that these organs possess a large factor of safety in respect to their capacity to excrete continually varying quantities of nitrogenous and inorganic compounds in solutions exhibiting a wide range of difference in reaction. The organism in health depends on the kidneys for the removal of excess of fixed acids or bases as a part of its essential acid-base equlibrium. It would be unlike any other fundamental physiologic function if the mechanism to accomplish this were not adapted to liberal variations in the tasks that may be committed to it. On the other hand, one may readily understand that disorganization or destruction of any organ thus important would lead to serious consequences, particularly when the functions involved cannot well be vicariously assumed by other structures. In the case of the nitrogenous and inorganic catabolites, the other excretory organs—the skin, lungs and bowel—at best can exert insignificant action.

It can readily be understood, therefore, why certain restrictions of diet have been advocated in the management of certain types of renal disorder. The principle of "sparing" a weakened organ has been put into practice. Nor has this been all. As if to forestall possible deterioration through continued involvement in active excretory functioning, a highly moderated regimen has been recommended even for the healthy. The low-protein diet has been advocated as an insurance against the menace of the unremitting necessity of eliminating nitrogenous waste, not merely in the form of organic compounds but also as the excess of acid catabolites to which protein breakdown characteristically gives rise.

Chronic kidney disease manifested by renal insufficiency may be attended with certain other symptoms of an undesirable nature. Thus, it is well known that a gradual rise of blood pressure is usually observed in chronic glomerulonephritis. This has been attributed by some observers to progressive atrophy of renal tissue. As Anderson[1] has recently pointed out, the real cause of the progressive development of renal insufficiency in chronic nephritis is not clear. One view is that it is due to repeated infections. Day holds that it is due to a specific infection. Bell believes that each new infection occurring in a nephritic patient causes closure of more glomerular capillaries and leaves the patient with a smaller kidney filter than before. Carter, Howe and Mason suggest as a possibility that progressive injury to the kidneys may result from repeated minimal injury by means of irritating food substances, some of which are known and others as yet unrecognized. Injury to the remaining functioning tissue by high concentration of retained metabolites or by overactivity are other possible causes of the progressive development of insufficiency. It is admitted that there is likely to be a concentration of nonprotein nitrogenous substances, such as urea, uric acid and creatinine, higher than normal in the blood of the affected patients. Are these per se or their protein precursors directly responsible for the various pathologic manifestations? If not, has the emphasis placed on "high protein" tended to obscure the possible significance of entirely different etiologic factors?

To what extent diets unusually rich in protein may actually induce detrimental conditions must still be regarded as highly debatable. There are writers who, like Newburgh of Ann Arbor, insist that the human kidney may be injured by protein excess. There is the added suggestion—as yet it cannot be dignified with the designation of compelling evidence—that alleged renal injury is attributable to the excretion of "nephrotoxic amino-acids." Certain cogent experimental tests[2] warn against hasty generalizations. It is conceivable that bacteria as well as diet may injure. Furthermore, the added conclusion that hypertension and arteriosclerosis are due to the same factors is an as yet unwarranted jump.

Problems of etiology and treatment are likely to receive a more ready solution whenever the conditions under investigation can be experimentally duplicated. The history of medicine abounds in illustrations of this. Progress has often been delayed in the interpretations of those diseases for which an experimental counterpart is not attainable. This is to a large extent the case in the study of human renal disorder. Nephroses are readily produced by uranium salts, potassium chromate, chloroform and many other substances, but these conditions do not give a chronic renal insufficiency. The nearest approach to chronic types has been secured by removing or destroying a large part of the renal tissue. The kidney cortex can be reduced any desired amount and a proportion found that will simulate the reduced filter found in chronic nephritis. But the two conditions are not exactly similar; in chronic nephritis practically all of the glomeruli are at least partially closed, whereas, following partial nephrectomy, the small number that remain are entirely normal.

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[1] Anderson, Hilding: Experimental Renal Insufficiency, Arch Int. Med **37**: 297 (March) 1926

[2] Jackson, H, Jr, and Riggs, Margaret D: The Effect of High Protein Diets on the Kidneys of Rats, J Biol Chem **67**: 101 (Jan) 1926.

Anderson[3] has recently demonstrated that removal of two thirds of the kidney substance in rabbits results in a retention in the blood of urea and creatinine, which either increases progressively in intensity until death results, or decreases progressively until normal values are once more attained. If the renal insufficiency is not progressive, the kidney remnant undergoes hypertrophy. A high protein diet causes no further change in the kidney remnant than further to augment the hypertrophy. Such a diet causes a retention of creatinine and urea in the blood in rabbits from which a portion of kidney substance has been removed. It is proportionate to the amount of kidney that has been removed. The retention does not occur in normal animals. The finding deserving of most emphasis in this connection, however, is that hypertension is not caused in rabbits by renal insufficiency per se; nor by a high protein diet even in the presence of a low renal function; nor by prolonged retention of creatinine and urea in the blood. A marked atherosclerosis of the aorta may ensue, but it is not chargeable to the chemical changes in the blood just described. For the present, the reference of high blood pressure to the concentration of the usual blood metabolites must still be subject to large reserve of statement and to openmindedness.

WHISKY—THEN AND NOW

Soon after the passage of the federal Food and Drugs Act of 1906, the formulation of definitions for various products likely to come under the suspicion of the enforcement agents became a pressing and highly debated problem. It early included the question of what constitutes whisky. After considerable controversy the simple official conclusion was reached, in effect, as Bailey[4] has expressed it, that the commodity which was then, and which had been for many years, commonly known and accepted in the trade and among consumers as whisky, was whisky. This interpretation did not limit the name to that product aged in wood whereby the aroma and flavor for which whisky is prized are acquired; nor did it make the natural color developed by the aging process an essential. Thus, factitious whiskies made largely, or in part, from mixtures of grain alcohol, caramel, beading oil and artificial flavor were widely sold as, and for, whisky long before prohibition became operative. The same government chemist has pointed out that, presumably under the influence of the Volstead Act, whisky and brandy, which had hitherto been recognized as medicinal agents and included in the United States Pharmacopeia, were omitted in the ninth revision of that text. But, in view of the fact that both of these commodities are legitimately obtainable under proper restrictions, it would be unfortunate if there were no official specifications for their substance and quality, and in the present (tenth) revision of the Pharmacopeia these two products are again recognized.

Through circumstances that do not require discussion here, it happens that alcoholic fluids alleged to be whisky have not been entirely excluded from use as beverages. The fact that most of both the manufacture and the traffic in such products is conducted in illicit ways has led to widespread possibilities of "adulteration" that may have unexpected menaces to the health of those willing to indulge in the bootlegger's wares. The real danger in the substitution of methylated spirit, or wood alcohol, for ethyl alcohol in potable fluids is now generally recognized.[5] Not long ago we referred to the unexpected presence of considerable—perhaps even menacing—quantities of copper found in samples of "hooch" by government authorities in Massachusetts.[6] An informative investigation of samples of alleged whisky secured by police or prohibition officials in connection with the enforcement of state or federal laws has been reported from Connecticut.[4] Aside from a series of samples in which wood alcohol had been substituted for grain alcohol and all of which were traced to one source, no foreign substance was identified in "bootleg" liquor of the types ordinarily used as beverages, which in kind or amount could be regarded as a probable cause of death.

There is substantial analytic and other evidence to show that much of the alcohol used in preparation of present-day liquors is obtained by the rectification of denatured alcohol, particularly the specially denatured type. Such alcohol generally shows on analysis traces of denaturants that have carried over in the process of purification. What the physiologic effects, cumulative or otherwise, of these small amounts of denaturants may be is speculative, but the Connecticut chemists are aware of no authoritative opinion that traces of such substances as diethylphthalate, isopropyl alcohol, benzene and acetone are likely to produce measurable effects of a dangerous character. However, they insist that with the evidence that much of the alcohol found in intoxicating liquors is derived from the denatured article, there is always the possibility of inefficient purification, and hence such liquors constitute a potential source of danger. In nearly half of the samples tested the alcohol appears to have been derived wholly, or in part, from denatured alcohol.

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[3] Anderson, Hilding: Experimental Renal Insufficiency, II, Protein Diet Experiments, Arch. Int. Med. **37:** 297 (March) 1926.

[4] Bailey, E. M.: The Thirtieth Report on Food Products and the Eighteenth *Report on Drug Products*, 1925, Bull. *276*, Connecticut Agric. Expt. Sta., March, 1926.

[5] Medical Aspects of "Bootleg" Liquors, editorial, J. A. M. A. **84:** 1182 (April 18) 1925; Alcohol—Pure and Impure, ibid. **85:** 1560 (Nov. 14) 1925.

[6] "Hooch," "Home Brew" and Copper, editorial, J. A. M. A. **86:** 1552 (May 15) 1926.

It is not without significance to compare the bar whisky of the cheaper sorts dispensed a decade or more ago with the stock in trade of the bootlegger. The average alcohol content is essentially the same. Artificially colored whisky was about as prevalent before prohibition as it is now. Perhaps some of these findings will help to interpret an experienced chemist's comment that "the most poisonous constituent of alcoholic liquors is the alcohol which they contain." Nevertheless it is well to bear in mind further the conclusion of Bailey that the possibility of clumsy manipulation of denatured alcohol in order to make it fit for beverage purposes constitutes a menace to health which cannot be ignored. This applies not only to whisky but to similar liquors, such as gin, brandy and cordials, of high alcoholic content, all of which may be produced factitiously.

TISSUE REACTIONS TO IRRADIATION

Remedies are frequently and justifiably employed in medicine before their exact mode of action is understood; but it is profitable and interesting to obtain definite knowledge as soon as possible, so as to regulate their use to the best advantage. Irradiation of tumors cannot be done to the fullest extent and with the most favorable results until its effects on tumor cells, normal tissues, and the body in general are accurately known.

The effects of irradiation on tumor cells have recently been considered in a summary of the subject by Dr. James Ewing.[1] Either a shrinking and pyknosis of the nuclei, or swelling from imbibition of fluids, resulting in degeneration or necrosis, are among the first of the occurrences in the tumor cells. Mitosis is stopped for a considerable period, even if the cells recover eventually. The exact physical chemistry of the cellular changes is not yet known, but in most cases they take place more readily in dividing than in resting cells, and especially in rapidly growing tumors Besides this primary injury, irradiation is followed by a secondary and more important injury, due to interference with the blood supply of the tumor. The blood vessels are the site first of inflammation and exudation, and then of induration, resulting in anemia of the tissue supplied. This factor is frequently underestimated in the destruction of cancers. The surrounding normal connective tissue receives some injury also, and the dose must be nicely adjusted so that, while the injury to the tumor cells is followed by necrosis, that to the normal tissue is followed by inflammation and repair. The reaction on the part of the lymphocytes and plasma cells is characteristic of beginning repair, and is followed in many instances by growth of connective tissue which completes the process.

The various systems of dosage differ in the tissue reactions which they call forth, and rational choice between them should be determined by the type of reaction desired. The prolonged single exposure to a moderate dose of hard rays is most efficient in killing rapidly dividing tumor cells and aborting growth, without causing much injury to normal tissue or stimulating a defense reaction. Smaller fractionated doses at intervals of a few days are intended to destroy the tumor cells by the cumulative effect of repeated injuries, and are accompanied by moderate tissue reaction. The method is safe and convenient. The single large killing dose gives the most impressive results, but the exact size of the dose needed for different kinds of tumors is a difficult matter to determine It causes marked destruction of the abnormal cells, with severe general tissue reaction, and is therefore a most effective method of treatment. The tissue reactions called forth by radium and by roentgen rays also differ, as the former acts chiefly on the actual tumor cells, while the latter stimulate the surrounding normal tissue to a greater degree.

The effect of irradiation on the body in general is also a factor to be considered and may be of considerable importance. The nutrition and metabolism are probably improved by the rays, and it has been suggested that a general nonspecific protein immunization is effected, whereby resistance of the body to the tumor is increased. At present the chief need seems to be for more exact histologic descriptions of the changes caused in different types of tumors by different doses of irradiation and methods of application, so that the mode of treatment best calculated to produce a desired result can be more accurately determined.

Current Comment

JUTE DERMATITIS

Even primitive man realized that certain occupations and trades may be dangerous to health. Hippocrates and Galen mentioned it, and Ramazzini's treatise on the diseases of occupation dates back to 1760. It is only in comparatively recent times, however, that detailed attention has been directed to the precise nature of the manifold menaces to health and longevity for which industrial conditions may be responsible. A higher value is being placed on human life. If the factors that tend to impair its length or efficiency are discovered, they can in many instances be amended or averted with hygienic benefit. Mere diagnosis of the pathologic condition is not sufficient for such progress; the causative agencies and their mode of action must be ascertained. Interest in special occupational diseases varies in different parts of the world, owing to the peculiarities in the distribution of the trades and vocations. The mines and chemical trades, for example, are not always or even commonly centered in the same geographic regions. Thus, it happens that the problems of vocational hygiene differ markedly in various countries of the world. An illustration of this is afforded by certain features of the jute mills. Aside from the annoyance of the dusts encountered in the production of cordage, twine, jute and similar materials, the occurrence of skin rashes caused by oils and coloring matter has been recognized though rarely referred to. In India, however, where in the provinces of Bengal alone there are more than 281,000 persons working in jute mills, registered under the factory act, jute dermatitis has attained a greater significance. According to Curjel and Acton[1] of Calcutta, this folliculitis, which does not ordinarily give rise to irritation or itching, is a nonsuppurative lesion caused by the mechanical blocking of the sebaceous gland orifices by plugs of the unexfoliated stratum corneum. The primary incitant is the mineral oil used for softening the jute; it does not irritate the skin, but protects the cutaneous surfaces from water and thus increases the accumulation of skin débris, particularly in the natives who do not cleanse their skins thoroughly with suitable detergents. The remedy is simple, so long as septic changes are not superimposed. The occupational affection of the skin in jute workers presents a good illustration of the importance of cleanliness of the body; for the symptoms are so benign that medical advice is rarely sought unless added disturbances supervene.

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[1] Ewing, James: Tissue Reactions to Radiation, Am. J. Roentgenol. **15**: 93 (Feb.) 1926.

PIES AND CAKE FOREVER!

Pie is essentially an American dish. Until recently it shared, in certain quarters at least, the characteristic derogation that has often been directed at some of our national products and customs. Forgetting how our Yankee forefathers included pies as the veritable basis of their daily diet, the critics have sought to impugn this widely eaten American product and to assail its use. The dictionary has long defined pie as "prepared food baked either between two layers or crusts of pastry or with only an upper or lower layer." The almost infinite variety of combinations with fruits, meats and what not that the use of flour in the ready-to-eat form of pie permits has served greatly to enhance the popularity of the edible food. Of course there are pies and pies; yet the diversity of pastry cooks and their unlike talents scarcely warrants the unfortunate repute that pie has acquired in many quarters. Foremost is the charge of indigestibility; but why the combination of flour with fat and fruit should preferably be in the form of bread and butter with apple sauce or fruit jam rather than as delectable apple or strawberry pies is difficult to fathom. At any rate, the experts or "food specialists" seem to be showing a change of heart and a revision of ideas. Cake likewise seems to be coming into its own. A recent writer[2] has justly insisted that cakes are real foods. They should not be regarded solely as confections to tempt the jaded appetite, but for what they are—good sources of food essentials. To the charge that cakes are too "rich" for many persons, it should be noted that as a general average these products contain 1,500 calories to the pound, or only 25 per cent more than the average bread. If we translate a culinary blend of flour and eggs with butter, fruits or nuts into terms of foodstuffs, the answer indicates proteins, fats, carbohydrates, mineral nutrients and vitamins. A slice of bread and butter is almost twice as rich in fat as "gold cake" or "devil's food." The day of reckoning has arrived. American pies and cakes will survive the ordeal of dietary criticism.

SMALLPOX TAKES ITS TOLL

The way of the transgressor is admittedly hard; and it seems as though the efforts of the reformer also are sometimes beset with undeserved if not insurmountable difficulties. The crusade for the public health continually encounters the forces of ignorance, indifference, prejudice and self-interest that blindly resist innovation and progress. Occasionally it almost seems as though betterment of the race and increased happiness of the individual could be accomplished only at a sacrifice of human effort and self-respect that seems too exorbitant. The prevention of disease as it is practiced today is based on discoveries and experiences that have become a part of the permanent knowledge of the race. Success in preventive medicine therefore demands the unflagging inculcation of established facts. Sometimes this means rebuff and reiteration; but the end to be attained is, after all, precious enough to discount discouragements. Recently our news columns recorded[1] that 163 persons are known to have died of smallpox in California during the first quarter of the year. The cases reported numbered nearly two thousand. One hundred and thirty-six of these deaths occurred in one of the most enterprising cities of the world, Los Angeles. This heavy toll of human life is not attributable to any local impossibility of securing advantage of the triumphs of modern prevention of smallpox. It was not due to the incompetence of the medical profession. The real cause is to be found in the indifference or even active opposition engendered through the influx of antimedical forces. As truth is the best defender of the faith, no opportunity should be overlooked to make the records of history tell their story to those who may waver in their acceptance of the help of modern medicine or even sneer at its claims. In the Jubilee Volume of the American Public Health Association, Chapin[2] significantly records that during the last fifty years only one school child in Providence, R. I., has had smallpox, and that was one of the exceedingly small number of children who, for one reason or another, escaped vaccination. If vaccination were compulsory for all school children, the same record would prevail in all the schools throughout the United States. If some one were to say that the smallpox death toll in California is taken largely among adults, he may be referred to the records of the World War. Despite the extreme half of the samples tested the alcohol appears to have been derived wholly, or in part, from denatured alcohol.

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[1] Curjel, D. F., and Acton, H. W.: Jute Dermatitis, Indian J. M. Research 12: 257 (Oct.) 1924.

[2] Shaw, R. H.: Cake and Nutrition, Baking Technology 5: 104 (April) 1926.

[1] Smallpox Kills One Hundred and Sixty-Three in Three Months, J. A. M. A. 86: 1459 (May 8) 1926.

[2] Chapin: A Half Century of Public Health, Am. Pub. Health A., 1921, p. 145.

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[1] Ewing, James: Tissue Reactions to Radiation, Am. J. Roentgenol. 15:93 (Feb.) 1926.

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Pie is essentially an American dish. Until recently it shared, in certain quarters at least, the characteristic derogation that has often been directed at some of our national products and customs. Forgetting how our Yankee forefathers included pies as the veritable basis of their daily diet, the critics have sought to impugn this widely eaten American product and to assail its use. The dictionary has long defined pie as "prepared food baked either between two layers or crusts of pastry or with only an upper or lower layer." The almost infinite variety of combinations with fruits, meats and what not that the use of flour in the ready-to-eat form of pie permits has served greatly to enhance the popularity of the edible food. Of course there are pies and pies; yet the diversity of pastry cooks and their unlike talents scarcely warrants the unfortunate repute that pie has acquired in many quarters. Foremost is the charge of indigestibility; but why the combination of flour with fat and fruit should preferably be in the form of bread and butter with apple sauce or fruit jam rather than as delectable apple or strawberry pies is difficult to fathom. At any rate, the experts or "food specialists" seem to be showing a change of heart and a revision of ideas. Cake likewise seems to be coming into its own. A recent writer[2] has justly insisted that cakes are real foods. They should not be regarded solely as confections to tempt the jaded appetite, but for what they are—good sources of food essentials. To the charge that cakes are too "rich" for many persons, it should be noted that as a general average these products contain 1,500 calories to the pound, or only 25 per cent more than the average bread. If we translate a culinary blend of flour and eggs with butter, fruits or nuts into terms of foodstuffs, the answer indicates proteins, fats, carbohydrates, mineral nutrients and vitamins. A slice of bread and butter is almost twice as rich in fat as "gold cake" or "devil's food." The day of reckoning has arrived. American pies and cakes will survive the ordeal of dietary criticism.

SMALLPOX TAKES ITS TOLL

The way of the transgressor is admittedly hard; and it seems as though the efforts of the reformer also are sometimes beset with undeserved if not insurmountable difficulties. The crusade for the public health continually encounters the forces of ignorance, indifference, prejudice and self-interest that blindly resist innovation and progress. Occasionally it almost seems as though betterment of the race and increased happiness of the individual could be accomplished only at a sacrifice of human effort and self-respect that seems too exorbitant. The prevention of disease as it is practiced today is based on discoveries and experiences that have become a part of the permanent knowledge of the race. Success in preventive medicine therefore demands the unflagging inculcation of established facts. Sometimes this means rebuff and reiteration; but the end to be attained is, after all, precious enough to discount discouragements. Recently our news columns recorded[1] that 163 persons are known to have died of smallpox in California during the first quarter of the year. The cases reported numbered nearly two thousand. One hundred and thirty-six of these deaths occurred in one of the most enterprising cities of the world, Los Angeles. This heavy toll of human life is not attributable to any local impossibility of securing advantage of the triumphs of modern prevention of smallpox. It was not due to the incompetence of the medical profession. The real cause is to be found in the indifference or even active opposition engendered through the influx of antimedical forces. As truth is the best defender of the faith, no opportunity should be overlooked to make the records of history tell their story to those who may waver in their acceptance of the help of modern medicine or even sneer at its claims. In the Jubilee Volume of the American Public Health Association, Chapin[2] significantly records that during the last fifty years only one school child in Providence, R. I., has had smallpox, and that was one of the exceedingly small number of children who, for one reason or another, escaped vaccination. If vaccination were compulsory for all school children, the same record would prevail in all the schools throughout the United States. If some one were to say that the smallpox death toll in California is taken largely among adults, he may be referred to the records of the World War. Despite the extreme ease of transmitting contagion in great armies, this disease was a negligible factor in the mortality lists. Even among adults, therefore, almost perfect protection is secured against smallpox when vaccination and revaccination are universally followed. Smallpox must be made to vanish—even if such established platitudes must be reiterated again and again and again.

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[1] Curjel, D. F., and Acton, H. W.: Jute Dermatitis, Indian J. M. Research **12**: 257 (Oct.) 1924.

[2] Shaw, R. H.: Cake and Nutrition, Baking Technology **5**: 104 (April) 1926.

[1] Smallpox Kills One Hundred and Sixty-Three in Three Months, J. A. M. A. **86**: 1459 (May 8) 1926.

[2] Chapin: A Half Century of Public Health, Am. Pub. Health A 1921, p. 145.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Summer Medical Courses.—The University of Alabama School of Medicine offers summer courses from June 2 to August 17 in anatomy, pharmacology, surgery and physiologic chemistry, which are of the same character as courses of the regular school session, and for which full credit is given. The classes are limited to forty students in each subject. While designed for medical students, the courses are open to others qualified, provided there are vacancies after medical students have registered. The second term of the summer session opens, July 14.

CONNECTICUT

Another Hospital Centennial.—The New Haven General Hospital, New Haven, celebrated the completion of its first hundred years of service to the community, May 27. In the morning, addresses were made by the heads of four departments of Yale University Medical School, which now conducts the hospital, and following a luncheon, Dr. William H. Carmalt, one of the oldest general practitioners of Connecticut, spoke on "A Retrospect of One Hundred Years," followed by Dr. Rufus I. Cole, Rockefeller Institute, New York, on "The Modern Hospital and Medical Progress." Among the speakers were Drs. Eugene M. Blake, Samuel C. Harvey, Arthur H. Morse and Edwards A. Park, all of Yale University Medical School. The celebration closed with a banquet at which President Angell of Yale, Mayor Tower of New Haven, and representatives of other hospitals in the city gave addresses.

GEORGIA

Society News.—Dr. Henry M. Fullilove, Athens, was elected president of the Railway Surgeons Association of Georgia at the seventy-seventh annual convention, May 11; Drs. Josephus J. P. Bowdoin, Atlanta, William M. Folks, Waycross, and Agnew H. Hilsman, Albany, vice presidents, and Dr. Jarrett W. Palmer, Ailey, secretary-treasurer.——Dr. Leland G. Baggett addressed the Fulton County Medical Society, Atlanta, May 20, on "Gastric and Duodenal Ulcers"; Dr. James K. Fancher gave a clinical talk on "Abnormal Body Weights and Their Relation to the Endocrines."——Drs. Edward S. Cowles and Burr Ferguson, both of New York, addressed a special meeting of the Fulton County Medical Society, Atlanta, June 2, on "Psychopathology with Special Reference to Medicine" and "Control of White Blood Cells," respectively.

IDAHO

Personal.—Dr. Ezra E. Fry, Bonners Ferry, has been elected president of the Bonner County Medical Society, and Dr. Nathaniel R. Wallentine, secretary-treasurer.——The governor has appointed Dr. John I. McKelway, former assistant superintendent of the Western State Hospital at Fort Steilacoom, Wash., as superintendent of the Northern Idaho Sanitarium at Orofino, to succeed Dr. John W. Givens.

ILLINOIS

Physician Sentenced.—Dr. John W. Ballance, Marion, formerly mayor of Harrisburg, Ill., has been sentenced to serve one year and one day in the federal penitentiary at Leavenworth, Kan., it is reported, for violation of the Harrison Narcotic Law.

State Medical Election.—At the seventy-sixth annual meeting of the Illinois State Medical Society, Champaign, May 20, Dr. Mather Pfeiffenberger, Alton, was elected president; Dr. Gustaff H. Mundt, Chicago, president elect; Drs. Earl D. Wise, Champaign, and Charles S. Nelson, Springfield, vice presidents; Dr. A. J. Markley, Belvidere, treasurer, and Dr. Harold M. Camp, Monmouth, secretary. The next annual meeting will be at Moline.

Down-State Milk Control.—The state department of health recently completed detailed inspections of the 349 down-state pasteurizing plants which furnish most of the milk consumed in cities, in accordance with a new law which requires that all pasteurizing plants, except those serving the city of Chicago, secure, annually, certificates of approval from the state health department. These were the first inspections preliminary to issuing certificates of approval. The state health director states that the municipal milk supplies this summer will be of a distinctly better sanitary quality than ever before.

Society News.—At the regular meeting of the Rock Island County Medical Society, Moline, May 11, it was unanimously voted to go on record against the bill recently introduced into the U. S. Senate (no. 4085) "to strengthen the Harrison Narcotic Act"; the scientific program at the meeting comprised addresses by Dr. Burton Hazeltine, Chicago, on "Bronchial Asthma"; Dr. Alvin W. La Forge, Chicago, "The Internist's Problem in Asthma," and Dr. Ralph Kuhns, Chicago.——Dr. Henry G. Schmidt has been elected president of the Elgin Physicians' Club, and Dr. Floyd A. Pingree, secretary-treasurer (reelected); the next meeting will be in October.

Chicago

Personal.—Dr. John Gordon Wilson has been elected chief of staff of the Wesley Memorial Hospital, to succeed the late Dr. William E. Schroeder.

Dedication of Memorial.—The John B. Murphy Memorial Association and the American College of Surgeons announce that the John B. Murphy Memorial building, 48 East Erie Street, Chicago, will be dedicated, June 10-11. Mr. L. A. Goddard, president of the Memorial Association, will preside, June 10, on which day, Sir Berkeley G. Moynihan will deliver an oration. Dr Rudolph Matas will preside, June 11, when addresses will be given by Dr. George W. Crile, Cleveland; Dr. William W. Chipman, Montreal, Canada, and Dr. William J. Mayo, Rochester, Minn.

INDIANA

Personal.—Dr. Dudley F. Davis has been elected president of the New Albany Academy of Medicine.——Dr. and Mrs. Barton S. Sheffer, St. Joe, celebrated their golden wedding anniversary, March 14.——Dr. Walter W. Lee has assumed his new duties as state epidemiologist for the state board of health, to succeed Dr. Arthur L. Oilar; Dr. Lee has been in practice at Winona, Ontario, Canada.

Cancer Clinic.—Dr. Joseph C. Bloodgood, Johns Hopkins University Medical School, Baltimore, conducted a cancer clinic at St. Margaret's Hospital, Hammond, May 13, for physicians of the Tenth Indiana Congressional District and others Dr. Bloodgood also addressed a community health meeting at the high school, which was a part of the program of "Civic Week"; other speakers at this meeting were Allen Craig, Chicago, and Father C. B. Moulinier, Milwaukee, president of the Catholic Hospital Association.

IOWA

State Medical Election.—At the annual meeting of the Iowa State Medical Association, Des Moines, Dr. Thomas E. Powers, Clarinda, was elected president; Dr. Michael J. Kenefick, Algona, president elect; Dr. Frederick G. Murray, Cedar Rapids, vice president; Dr. Addison C. Page, treasurer, and Dr. Tom B. Throckmorton, Des Moines, secretary. The next annual meeting will be at Council Bluffs. The association adopted a new plan of conducting business, vesting authority in a board of trustees of three members, to which the house of delegates elected Dr. Vernon L. Treynor, Council Bluffs; Dr. Oliver J. Fay, Des Moines, and Dr. John F. Herrick, Ottumwa, all past presidents of the association.

KENTUCKY

Narcotic Violation.—Dr. William A. Francis, Bowling Green, pleaded guilty, May 18, to violating the Harrison Narcotic Act, it is reported, and was sentenced to one year in jail and to pay a fine of $1,000. The jail sentence, it is said, was suspended.

Hospital News.—The Kosair Convalescent Home for Crippled Children, representing an expenditure of about $200,000, contributed by the public, was formally opened, May 13; white crippled children under 12 years of age, of any creed, are eligible for admission to the home. The Masonic Order will have general supervision over the home.

Society News.—Dr. Adolph O. Pfingst has been elected president of the Louisville Eye and Ear Society for 1926; Dr. Melvin C. Baker vice president, and Dr. Charles C. Maupin, secretary-treasurer.——Dr. John F. Dunn, Arlington, was recently elected president of the Southwestern Kentucky Medical Association; Drs. Claude E. Kidd, Paducah, and George W. Payne, Bardwell, vice presidents, and Drs. James Vernon Pace and James T. Reddick, both of Paducah, secretary and treasurer, respectively; the semiannual meeting in October will be held in Murray.——Dr. Arthur T. McCormack, Louisville, has been reelected president of the Kentucky Conference on Social Work.——Dr. William R. Burr, Auburn, has been elected president of the Third District Medical Society to succeed Dr. Carl C. Howard, Glasgow.

MARYLAND

Arrests for Not Reporting Births.—The state board of health has recommended the prosecution of fifteen physicians in the state and four midwives for failure to report births in accordance with the state law. The announcement was made following the completion of a survey designed to ascertain the efficiency of birth reporting in the state.

Society News.—The Medical Society of the District of Columbia and the Baltimore City Medical Society held a joint meeting in Baltimore, recently, which was addressed by Dr. Charles S. White on "The Unsatisfactory Side of Gallbladder Surgery" and by Dr. Roy D. Adams on "The Ex-Service Man as a Problem in Diagnosis."——The Maryland Psychiatric Society and the Washington Society for Nervous and Mental Diseases held a joint meeting, May 20, at the Chestnut Lodge Sanatorium, Rockville, which was addressed by Dr. William A. White, superintendent, St. Elizabeth's Hospital, Washington, D. C., on "The Language of Schizophrenia."——Dr. Esther L. Richards, Johns Hopkins Hospital, addressed the Baltimore County Medical Society, May 19, at Harlem Lodge, Catonsville, on "Psychologic Aspects of Child Welfare."——Among others, Dr. Martin F. Sloan addressed the West Baltimore Medical Society, May 19, at the West Baltimore General Hospital on "Interesting Pulmonary Symptoms Simulating Tuberculosis."

Johns Hopkins' Fiftieth Anniversary.—Invitations have been sent to 12,000 former students for the fiftieth anniversary of the founding of Johns Hopkins University, October 22-23. The chief event will be the dedication of the new $1,000,000 building of the School of Hygiene and Public Health; Dr. Andrew Balfour, director, London School of Hygiene and Tropical Medicine, will speak at the dedication, and Prof. F. Neufeld, Berlin, director, Institute for Infectious Diseases, will deliver the De Lamar memorial lecture. The governor, Albert C. Ritchie, an alumnus of the university, has appointed a committee of thirty-seven citizens to represent the state at the celebration, and the mayor of Baltimore, a committee of 220 to represent that city. Among other prominent speakers at the functions will be Dr. Ira Remsen, second president of the university and the only surviving member of the original faculty of seven professors; Newton T. Baker, former secretary of war; Dr. Charles R. Bardeen, dean and professor of anatomy, University of Wisconsin Medical School, and Daniel Willard, president, Baltimore and Ohio Railroad and president of the board of trustees of Johns Hopkins University.

MASSACHUSETTS

Dr. Faxon Honored.—About 125 associates and friends of Dr. William O. Faxon, Stoughton, tendered him a complimentary dinner, May 1, in recognition of his public service in Massachusetts and his completion of fifty years in the practice of medicine.

Senate Disapproves Lye Bill.—The bill designed to prevent suffering by means of labeling in a specific manner all caustic or corrosive substances offered for sale was voted down by the Massachusetts state senate, although approved, says the *Boston Medical and Surgical Journal*, by the house. The bill had also been approved by the joint committee on legislation of the medical societies and the committee of the legislature had been so informed. The primary intent of this legislation, the like of which has been passed by many other states, is to prevent the suffering and disability that occurs among children who innocently swallow caustic and corrosive household substances. The Boston editor therefore says about the senate's action: "We wish to go on record that such behavior of a representative body is beyond the comprehension of physicians, who, having no selfish motives, are asking for the cooperation of our lawmakers in efforts to protect the public."

MICHIGAN

Personal.—Dr. Franklin W. Sassaman has been reappointed health officer of the city of Charlotte, making this his seventeenth year of continuous service.——Dr. Starr K. Church has been reelected city health officer of Marshall.——Dr. S. Rowland Hill has been reelected city health director of Lansing for the sixth time.

Clinics for Crippled Children.—During 1925 the Michigan Society for Crippled Children arranged for clinics at which 1,504 crippled children from seventeen different counties were in attendance. The greatest number of children examined by any one clinic was 142 in Houghton County; then 132 at Kalamazoo; 117 at Alpena; 116 at Cadillac, and 114 at Oakland. The society's clinic at Jackson has employed a public health nurse to direct the work, and some of the other large clinics have employed assistants.

Child Health Institute.—The Detroit Department of Health, cooperating with the board of education and other organizations, will hold the first annual child health institute in Detroit, on the twelfth floor of the Hudson Store, the week of June 7; there will be demonstrations of the health work done in the city public schools and lectures daily on prenatal care, infant care, behavior problems, health habits and recreation, and on Friday evening an address by Dr. Hugo A. Freund on "Adding Years to the Average Life."

Society News.—Dr. Martin A. Mortensen, Battle Creek, addressed the Wayne County Medical Society, Detroit, May 18.——Members of the Wayne County Medical Society were invited to attend the annual meeting of the Detroit Dermatological Society at Harper Hospital, May 25.——Dr. William B. Bartlett, Boston, addressed the Berrien County Medical Society, Benton Harbor, April 26, on "Treatment of Diabetes Mellitus in Children," and demonstrated the modern methods of taking basal metabolic rate determinations.——Members of twelve county medical societies in Michigan have agreed to undergo a periodic physical examination; one week after the matter had been presented to the St. Clair County Medical Society, all of its members had been examined.——Dr. Elmer L. Eggleston, chief, medical service, Battle Creek Sanitarium, addressed the Kent County Medical Society, May 26, on "Periodic Physical Examinations."

MISSOURI

License Revoked.—The Missouri State Board of Health, May 6, revoked the license of Dr. William H. Duckworth, St. Clair, it is reported, on a charge of unprofessional conduct. Dr. Duckworth is said to have been indicted by the March grand jury of Franklin County on a charge of having performed an illegal operation.

Largest Medical Reserve Officers' Training Corps.—St. Louis University Schools of Medicine and Dentistry have, according to the *Globe Democrat*, the largest reserve officers' training corps among the medical and dental schools of the United States, the total enrolment being 583. At the commencement in June, 102 members of the graduating classes in medicine and dentistry will be commissioned by the President as first lieutenants in the officers' training corps.

State Medical Election.—At the sixty-ninth annual meeting of the Missouri State Medical Association, St. Louis, May 17-20, Dr. Emmett P. North delivered the presidential address at a general meeting, Wednesday evening; Dr. Jabez N. Jackson, Kansas City, President-Elect of the American Medical Association, and Dr. John A. Witherspoon, Nashville, Tenn., also gave addresses; Dr. Francis Park Lewis, Buffalo, gave an address on "Achievements in the Prevention of Blindness"; Dr. Witherspoon also held a diagnostic clinic, Thursday afternoon, on duodenal and gastric ulcer. The meetings were all held in the auditorium at St. Louis University, except the clinics. The following officers were elected: Dr. William H. Breuer, St. James, president; Drs. George C. Willson, Nevada, Ross A. Woolsey, St. Louis, Francis M. McCallum, Kansas City, Paul F. Cole, Springfield, and Uriel P. Haw, Benton, vice presidents; Dr. George W. Hawkins, Salisbury, treasurer, reelected, and Dr. Edward J. Goodwin, St. Louis, secretary-editor, reelected. The next annual meeting will be at Sedalia.

Personal.—Dr. William L. Bradford, Sedalia, has been elected president of the Missouri Public Health Association; Dr. Elbert L. Spence, Kennett, vice president, and Dr. James Stewart, secretary of the state board of health, secretary.——Dr. Howard M. Smith, Kansas City, has been appointed head of the old City Hospital.——Dr. Porter E. Williams, Boonville, assumed the duties of superintendent of the General Hospital, Kansas City, April 14; Dr. Williams for years has been superintendent at various state hospitals.——Dr. Jule H. Keller, Lancaster, has been elected president of the Schuyler County Medical Society, and Dr. James B. Bridges, Downing, secretary, reelected.——Dr. Evarts A. Graham, Bixby professor of surgery, Washington University School of Medicine, succeeds the late Dr. Albert J. Ochsner, Chicago, as editor of the Year Book of General Surgery of the Practical Medicine Series.——Dr. Isaac N. Parrish Cowgill, has been appointed physician to the Indian schools at Colony, Okla., and has moved to that city.——Dr. Jabez N. Jackson, Kansas City, President-Elect of the American Medical Association, received the honorary degree of doctor of science from Park College at the recent commencement exercises.

NEBRASKA

Hospital News.—Dr. Charles E. Slagle, Alliance, was elected president of the medical staff of St. Joseph's Hospital at the annual meeting, May 7.——The Lanning Memorial Hospital, Hastings, has let the contract for construction of a $75,000 maternity unit.

Personal.—Dr. Frank L. Frink, Newman Grove, has been elected mayor for the third consecutive time.——Dr. Arno A. Bald, Platte Center, has been reappointed county physician of Platte County.——Dr. Russell J. Murdoch has been reelected mayor of Blair.——Dr. Clement L. Martin, Omaha, has become a member of the permanent staff of the Mayo Clinic, Rochester, Minn.——Dr. Ethel M. Laybourne has been appointed superintendent of the Bryan Memorial Hospital, Lincoln.

Society News.—The Nebraska Association of Medical Directors, representing twelve insurance companies, was organized, May 12, at Omaha, with Dr. Albert R. Mitchell, Lincoln, president; Dr. Arthur C. Stokes, Omaha, vice president, and Dr. Reuben A. Moser, Omaha, secretary-treasurer.——Dr. May L. Flanagan, Lincoln, was elected president of the Nebraska Association of Medical Women, May 11, at Omaha; Dr. Charlotte P. Seiver, Fremont, vice president, and Dr. Ruth A. Warner, Lincoln, secretary-treasurer.

NEW YORK

Personal.—Dr. Clarence Floyd Haviland, Albany, has resigned as chairman of the state hospital commission to become superintendent of the Manhattan State Hospital at Wards Island, July 1, and Dr. Frederick W. Parsons, superintendent of the Buffalo State Hospital, has been appointed to succeed Dr. Haviland as chairman of the state hospital commission.——Drs. Moses Keschner and Israel S. Wechsler have been appointed attending neurologists to the Montefiore Hospital, New York.——Dr. Ezra R. Bridge has been appointed superintendent of the Monroe County Sanatorium, Rochester.

Progress in Rehabilitating State Hospitals.—Governor Alfred E. Smith has issued a pictorial pamphlet to show the progress in rehabilitating the state hospitals and charitable institutions, and what is being done with the $50,000,000 bond issue which the people authorized at the 1923 election. There is a picture of additions to the Hospital for Crippled Children at West Haverstraw which will provide for 200 patients and sixty employees; another of the Harlem Valley Hospital, where some buildings are already occupied and where these bonds will provide 1,204 new patients' beds. Additions to Letchworth Village will provide 400 additional patients' beds for the infirm female inhabitants; a new hospital for sick inmates, a new administration building and new homes for attendants are under construction. There is a picture of the Creedmoor State Hospital for the Insane where buildings have already been erected and others are under construction; which will provide 1,044 additional patients' beds and relieve the overcrowding at Brooklyn State Hospital. There is a drawing of an entirely new hospital to be built in Rockland County, which will provide 3,800 beds and cost about $10,000,000. During 1924 and 1925 there have been added 8,066 new beds for patients in state institutions. The governor says that state officials are carrying on this great program with all possible energy; that the entire plan, only a part of which is shown in this pamphlet, has been carefully considered, and that it would have been impossible to lay out any such building program had there not been the assurance that funds would be available each year. From these studies of the hospital situation, the needs of the state in beds up to the year 1935 have been determined; the state can now say how large an institution ought to be and where it ought to be. Less than half of the $50,000,000 bond issue, as yet, has been expended.

New York City

Fifteen Chiropractors in Court.—Fifteen chiropractors were arraigned in Chief Magistrate McAdoo's Court, April 13, on charges of violating the "health law"; each was released on $500 bail. The charges were made by policewomen of the city to whom the chiropractors are said to have administered treatment recently.

Steel Work at Medical Center Completed.—Gen. William Barclay Parsons, chairman of the Joint Administrative Board for the $11,000,000 structure which will house the Presbyterian Hospital and the College of Physicians and Surgeons at Broadway and One Hundred and Sixty-Eighth Street, had the honor, May 24, of driving the last rivet in the steel framework of the building.

Society News.—Dr. Ralph Pemberton, Philadelphia, took part in a symposium on arthritis before the Medical Society of the County of New York at the Academy of Medicine, May 24; Dr. Pemberton's subject was "Significance and Use of Dietetics in the Treatment of Arthritis."——Dr. Joseph F. Ward has been nominated president for the coming year of the Brooklyn Society of Internal Medicine, and Dr. Joseph G. Terrence, secretary.——At the annual meeting of the Women's Medical Association, May 12, at the Women's City Club, Dr. Eleanor Vanness, Van Alstyne was elected president; Drs. Mary A. Reesor and Sophie Rabinoff, vice presidents; Dr. Allis Hascall, treasurer; Dr. Isabelle Beck, recording secretary, and Dr. Elsie A. Barthel, corresponding secretary.

Hospital News.—Two new departments will be added to the dispensary of the Knickerbocker Hospital on completion of its new $500,000 emergency unit next fall; they will be a prenatal clinic and a nose and throat clinic.——Raquel Meller, Spanish singer and dancer, gave a special performance recently to aid the St. Mary's Free Hospital for Children.——St. Peter's Hospital, Brooklyn, has purchased the adjoining building of the home for the aged, and a new wing will be built on the site.——The staff of the new maternity department of the Knickerbocker Hospital includes Dr. George L. Brodhead, visiting obstetrician; Drs. Edwin G. Langrock and Ralph Barrett, associate obstetricians, and Drs. Walter T. Stenson and Donald M. Campbell, assistant obstetricians.——The Hospital for Joint Diseases formally dedicated its country home at Far Rockaway, May 16. This mansion, representing a gift, including its endowment of $1,100,000, by Alfred Heinsheimer, has been rearranged to accommodate 100 patients; it stands on 14 acres of ground at Breezy Point.——The Memorial Hospital, Central Park West at One Hundred and Fifth Street, celebrated the completion of a new wing, May 12.

OHIO

Report of Military Committee.—The annual report of the military committee of the Ohio State Medical Association shows that there are 447 physicians commissioned in the medical reserve corps, and 195 dentists, of whom 71 and 24, respectively, were commissioned during 1925. The report says that 3,000 Ohio physicians, or about 70 per cent of the membership of the state medical association, served during the World War, and that during the Civil War 10 per cent of the entire membership of the Ohio State Medical Association was killed in action. Applications are needed to complete the general mobilization plans formulated by the general staff of the war department.

Society News.—Dr. Robert B. Cofield, associate professor of orth [illegible] y, University of Cincinnati School of [illegible] larence A. Mills, assistant professor of [illegible] of Cincinnati College of Medicine, addressed the Drake County Medical Society, May 8, on "Cause and Treatment of Back Pains" and "Significance and Methods of Treatment of Hemorrhages."——Dr. Charles F. Hoover, professor of medicine, Western Reserve University School of Medicine, Cleveland, addressed the Summit County Medical Society, Akron, May 18, on "Bedside Observation on Respiration."——Dr. Howard M. Clute, Boston, addressed the members of the Academy of Medicine of Toledo and Lucas County, May 7.——The Academy of Medicine of Toledo and Lucas County announced a course of lectures on "The Heart" to be given June 1-5, by Dr. Frank N. Wilson, University of Michigan Medical School, Ann Arbor.

OKLAHOMA

Personal.—Dr. Laurence H. Carleton, formerly of Tulsa, has accepted an appointment at the Henry Ford Hospital, Detroit. ——Dr. Ira C. Wolfe has been appointed city physician of Muskogee to succeed Dr. Charles E. White, resigned.—— Dr. Finis E. Sadler has been appointed city physician of Henryetta.——Dr. William E. Floyd has been appointed city superintendent of health of Muskogee.

Society News.—The Muskogee County Medical Society held an open meeting recently at the Presbyterian Church, Muskogee, conforming to the plans of the publicity committee of the state association. The church was crowded with laymen and physicians. Dr. LeRoy Long, dean, University of Oklahoma School of Medicine, gave an address on "The Relations of Scientific Medicine to the Community."

PENNSYLVANIA

Everyday Problems in Medicine.—Dr. Thomas McCrae, Magee professor of the practice of medicine and clinical medicine, Jefferson Medical College, Philadelphia, will address the physicians of seven counties of northwestern Pennsylvania at Warren, June 21, on "Everyday Problems in Medicine."

Personal.—Dr. Julian Ellis Kurtz, who recently retired from practice of medicine, has donated to the Berks County Medical Society 400 volumes, mostly on subjects related to diseases of the eye, ear, nose and throat. Dr. Kurtz is said to have been a member of the society since his graduation from Jefferson Medical College in 1880.

Hospital News.—A campaign to raise $6,000,000 will be undertaken soon for the purpose of increasing the Presbyterian Hospital, Pittsburgh, from a 150 bed institution to a 600 bed unit in the Pittsburgh Medical Hospital group.—— Providence Hospital, New Brighton, is conducting a campaign for $250,000.——St. Christopher's Hospital for Children, Philadelphia, recently established a neuropsychiatric clinic in connection with the department of preventive medicine; the staff of the new clinic consists of Dr. James J. Waygood, psychiatrist, Esther K. Rosen, Ph.D., psychologist, Edwin Westburgh, psychologist, and Fannie E. Teller, psychiatric social worker.

Philadelphia

Bequest to Jefferson Medical College.—The late William Potter, president of Jefferson Medical College and Hospital, bequeathed $50,000 in his will to Jefferson Medical College.

University News.—Dr. Lillian K. P. Farrar, New York, will address the Alumni Association of the Women's Medical College of Pennsylvania at the seventy-sixth anniversary of the college, June 10-11, on "Reaction of Tissues to Radium Treatment in Cancer of the Cervix and the Importance of Lacerations in This Location."

Hospital News.—Rush Hospital for Consumptives opened a new ward for advanced cases, May 27, which was presented by Charles P. Hall, president of the city council, in memory of his wife, who died twenty-five years ago.——The drive for $1,000,000 to build an addition to the Bryn Mawr Hospital was opened, June 2, with a dinner at the Bellevue-Stratford; more than 600 persons were present; Samuel Rea, chairman, executive committee in charge of the drive, presided. The drive will close, June 11.

Periodic Health Examinations.—Our correspondent writes that the long-awaited joint drive of the medical profession and the laity against cancer, nephritis and preventable diseases opened at a public meeting at the new Philadelphia County Medical Society Building, June 1, which was presided over by Mr. Alba B. Johnson, the new president of Jefferson Medical College; among the speakers were Dr. Orlando H. Petty, chairman, committee on periodic health examinations, Philadelphia County Medical Society; Dr. John Norman Henry, past president of the state medical society, and Dr. Harry Toulmin.

Navy Program.—The Medical Department of the U. S. Navy presented the entire program for the May 26 meeting of the Philadelphia County Medical Society, Capt. Arthur W. Dunbar, assistant surgeon general, representing Admiral E. R. Stitt, who was absent on account of illness. Among others who took part in the program were Lieut. Comdr. Walter A. Bloedorn, whose subject was "Periodic Health Examinations," and Capt. Richmond C. Holcomb, who gave an illustrated lecture on "Medical Officers Afloat." Other speakers were Capts, George T. Smith and James F. Leys, and Lieut. Comdrs. Abraham H. Allen, Joseph J. A. McMullin, Carrol R. Baker, George A. Eckert and John M. McCombs. Members of the reserve corps of the army and navy were requested to attend the meeting in uniform.

SOUTH DAKOTA

State Medical Election.—At the annual meeting of the South Dakota State Medical Association, Aberdeen, May 19-20, Dr. Theodore F. Riggs, Pierre, was elected president; Drs. Silas M. Hohf, Yankton, Nelson K. Hopkins, Arlington, and Lorenzo N. Grosvenor, Huron, vice presidents, and Dr. John F. D. Cook, Langford, secretary-treasurer.

Personal.—Dr. Francis E. Clough, Lead, has been appointed a member of the state board of health and medical examiners to succeed the late Dr. John W. Freeman, Lead.——Dr. William F. Keller, who has been connected with the board of health of Sioux Falls for nineteen years, has resigned, and Dr. T. J. Billion has been elected to fill the vacancy.——Dr. George M. Boteler, health officer of the board of health of Aberdeen for several years, has resigned, and will engage in practice in St. Louis.

TEXAS

University News.—The University of Texas has reorganized its department of botany to provide for the development of courses in bacteriology, and changed its name to the department of botany and bacteriology; I. M. Lewis, Ph.D., is the professor of bacteriology.

Personal.—Dr. Richard McCormick, Waco, has been reappointed county health officer for two years.——Dr. C. W. Gray, Brownwood, has been appointed county health officer to succeed Dr. Thomas B. Bailey, who recently resigned to become the city health officer of Brownwood.——Dr. Alfred L. Ridings has been appointed city health officer of Sherman, to succeed the late Dr. James A. Swafford.——Dr. Herschel F. Connally has been elected mayor of Waco.

State Medical Election.—At the annual meeting of the Texas State Medical Association, Houston, May 24-27, Dr. William Keiller, Galveston, was elected president; Dr. Joseph Gilbert, Austin, president-elect; Drs. Calvin R. Hannah, Dallas, Malone Duggan, Laferia, and James Greenwood, Houston, vice presidents, and Dr. Holman Taylor, Fort Worth, secretary. The campaign of publicity and law enforcement which is being conducted by the state medical association was enthusiastically endorsed at this meeting and ordered to be continued with vigor. The next meeting will be held at El Paso.

VIRGINIA

Society News. — Dr. Claude C. Coleman, Richmond, addressed a joint meeting of the Warwick County Medical Society and the Peninsula Dental Society at Newport News, May 10, on "Facial Pain."——Dr. Edward Howe Miller, Jr., Danville, has been elected president of the South Piedmont Medical Society, and Dr. George A. Stover, South Boston, secretary-treasurer, reelected.——At the annual meeting of the Virginia Society of Otolaryngology and Ophthalmology, Charlottesville, April 27, Dr. Clifton M. Miller, Richmond, was elected president; Dr. Charles S. Dodd, Petersburg, vice president, and Dr. Fletcher D. Woodward, Charlottesville, secretary-treasurer.——The Medical Association of the Valley of Virginia met in Harrisonburg, May 27; among others, Dr. Hugh H. Young, Baltimore, gave an address.——At the annual meeting of the Walter Reed Medical Society, Yorktown, May 21, Dr. John W. C. Jones, Newport News, was elected president; Dr. John M. Henderson, Williamsburg, first vice president; Dr. James E. Marable, Newport News, treasurer, and Dr. Landon E. Stubbs, Newport News, secretary; on the second day, the members went to Fort Eustis to see demonstrations in the treatment of fractures, then returned to Yorktown, and were addressed by Dr. Southgate Leigh, Norfolk, on "The Importance of Periodic Medical Examinations," and by Dr. William Wayne Babcock, Philadelphia, on "Surgery in Relation to Gallbladder Diseases."

WEST VIRGINIA

Personal.—Dr. David Berman has been appointed health officer of Marshall County; Dr. Berman was formerly instructor in public health and hygiene at Antioch College, Antioch, Ohio.——The governor has appointed Dr. Mortimer D. Cure, Weston, superintendent of the Weston State Hospital.——Dr. John W. Niedermeyer has been appointed city health officer of Benwood, succeeding Dr. William B. Hartwig, resigned.

Society News—Dr William T Henshaw, state commissioner of health, addressed the Kenawha County Medical Society, recently, on illegal practitioners in West Virginia ——Dr Thomas R Boggs, assistant professor of medicine, Johns Hopkins Hospital, Baltimore, addressed the Academy of Medicine of Parkersburg, recently, on "Biliary Disease" ——The Webster-Nicholas Medical Society has been reorganized so as to include physicians of Braxton County and named the Central West Virginia Medical Society, Dr. Charles Frederick Fisher, Richwood, was elected president, and Dr Homer S Brown, of Sutton, secretary-treasurer

HAWAII

Personal—Dr George S Bliss has resigned as superintendent of the Waimano Home, Hawaii, to accept a position as superintendent of the Pacific Colony, a new institution for the feebleminded at Spadra, Southern California

Annual Health Report—The death rate in Hawaii for the year ending June 30, 1925, a report of which has just been received, was the lowest in the history of the territory, 12 74 per thousand, the infant mortality rate was 103 59 per thousand, also the lowest on record The board of health credits this record to the work of the public health nurses in the districts, to the work of the Palama Settlement in the city of Honolulu, and to the inauguration of clinics for mothers and children by physicians and nurses on many plantations There were no cases of smallpox in the territory during the year, and only two cases of human plague, both of which were fatal, and fourteen cases of rodent plague In the plague eradication campaign, 176,593 rodents were obtained, and of these 169,826 were examined microscopically for plague The principal public health problem was brought about by a strike of the Filipino laborers, there was a number of deaths due to a lack of proper food and housing and overcrowding following the strike, but the strikers' camps were carefully inspected and a typhoid epidemic was averted.

GENERAL

National Association for Study of Epilepsy.—The twenty-fifth annual meeting of this association will be held at the Waldorf-Astoria New York, June 7 8, under the presidency of Dr George Kirby Collier, Rochester, N Y , among others, Drs Stanley Cobb and William G Lennox, Harvard Medical School, Boston, will discuss "Some Clinical and Laboratory Observations with Reference to Convulsions", Dr Leland B Alford, St Louis, "The Epileptic Convulsion Considered as a Type of Extrapyramidal Disturbance", Dr Smith E Jelliffe, New York, "Narcolepsy, Hypnolepsy, Pyknolepsy,' and Dr Otto Wuth, Johns Hopkins University Medical Department, "Rational Bromide Treatment—A New Method for Its Control' In the same program is announced the eighty-second annual meeting of the American Psychiatric Association at the Waldorf-Astoria, June 8-11

Medical Library Association.—The twenty-ninth annual meeting of this association will be held at Ann Arbor, Mich , June 7-9 Dr Hugh Cabot, dean, University of Michigan Medical School, will give the opening address, and Dr Frederick Tice, Chicago, president of the Medical Library Association, will give the response Among others, the librarian of the University of Michigan, Mr William W Bishop, will speak on 'The Present Status of International Bibliography in the Field of Science" There will be a reception, Tuesday evening, at the William L Clements Library, when Dr Aldred S Warthin, director, pathologic laboratory, University of Michigan, will demonstrate some unusual features in the Lewis Stephen Philcher collection of rare and early books in medicine, which collection will be on exhibition in the library The business meeting will be Tuesday afternoon

Prize Contest in Physical Therapy.—The American College of Physical Therapy announces a contest open to physicians physicists and fourth and fifth year students in recognized medical schools in which the six prizes will be physical therapy equipment, totaling a value of more than $2,500 The thesis, which must concern some branch of physical therapeutics, must not exceed 2,000 words and must involve some problem of research, and be typewritten, and double-spaced on one side of the paper only Theses must be submitted to the chairman of the committee, Dr Disraeli W Kobak, 30 North Michigan Avenue, not later than October 15 The winners will be announced at the Clinical Congress at the Drake Hotel, Chicago, October 18-23 The judges will be selected from the faculties of several medical schools, and will not be connected with the American College of Physical Therapy.

International Conference on Oil Pollution of Waters.—The state department announces that former Senator Joseph S Frelinghuysen of New Jersey will head the American delegation to the International Conference of Experts on Oil Pollution of Navigable Waters, which meets in Washington, June 8 Congress, in 1922, authorized the President to call a conference of maritime nations with a view to the adoption of effective means for the prevention of pollution of navigable waters The use of oil as fuel by vessels and the evils that result, including pollution of bathing beaches, harbors and shore property, and the consequent detriment to property and health, shore recreation, increased fire hazard and injury to the fishing industry and wild life, will be discussed It is hoped that the forthcoming conference may prepare plans for an agreement of maritime nations to control oil pollution The following countries have indicated their acceptance of invitations to attend the conference Belgium, Denmark, France, Germany, Great Britain, Greece, Italy, Japan, Netherlands, Norway, Spain and Sweden

Society News—At the meeting of the American Gynecological Society, May 20-22, Dr Arthur H Curtis Chicago, was elected president, Drs Frank W Lynch, San Francisco, and J R Goodall, Montreal, vice presidents, Dr Fred L Adair, Minneapolis, treasurer, and Dr Floyd E Keene, Philadelphia secretary ——Mrs E P Gengenbach Denver, was installed as president of the Women's Auxiliary of the American Medical Association at the recent annual meeting in Dallas, Texas, Mrs John O McReynolds, Dallas, was elected president elect ——At the annual meeting of the American Roentgen-Ray Society, Detroit, May 18-22, Dr Alexander H Pirie, Toronto, was elected president elect, Dr Patrick F Butler Boston, and Edward L Jenkinson, Chicago, vice presidents, Dr William A Evans, Detroit, treasurer, and Dr Charles L Martin, Dallas, Texas, secretary ——At the eleventh annual convention, Philadelphia, May 25 of the American Association of Industrial Physicians and Surgeons, Dr William A Sawyer of the Eastman Kodak Company, Rochester, N Y , was elected president, Dr Clare F N Schram, of the Fairbanks-Morse Company, Beloit, Wis , and Dr Robert S Quimby of the Hood Rubber Company, Watertown, Mass , vice presidents and Dr Frank L Rector, editor, *Nation's Health,* Chicago, secretary-treasurer (reelected)

Opposition to Strengthening Narcotic Law.—At a hearing held by the Ways and Means Subcommittee of the House of Representatives, May 24, vigorous opposition was made to the Treasury Department bill to strengthen the Harrison Narcotic Law by the American Pharmaceutical Association, represented by Samuel L Hilton, Washington, D C, and by the American Medical Association, represented by Dr W C Woodward Chicago Mr. Hilton sharply criticized the proposed provision which would require pharmacists to determine whether a physician's prescription was or was not issued in the course of professional practice and to refuse to fill such prescriptions as the pharmacist may reasonably suspect of not having been so issued He said, "Why should the druggist be jailed for following orders?' He opposed the provision for keeping records—additional to those now required—because it would increase the cost of drugs to the people he asserted that it would take from three to six hours to find out whether the ordinary prescription is lawful "If this requirement is enacted into law,' Mr Hilton said, "I shall surrender my narcotic license as a wholesaler I would decline absolutely to fill such a prescription and run a chance of violating the law The keeping of records has gotten to be a bugaboo for the druggists I spend three days out of the month in keeping my records The extra help needed to keep the proposed record would not be justified by the business" Dr Woodward, representing the American Medical Association, stated that further regulation of the narcotic traffic by the federal government would jeopardize the present antinarcotic laws, and that the determination of who may practice medicine and who may dispense drugs belongs to the states "But that does not leave Congress helpless,' Dr Woodward said "It can cooperate with the states At present there are twenty-nine states and three territories which have specific regulations authorizing the revocation of licenses of physicians known to be drug addicts We doctors approve of regulation through ordinary channels, through the states as at present, but we regard the proposed legislation as unwise" "With respect to this refusal of registration to doctors known as drug addicts," Dr Woodward continued, "the question arises, What is a drug addict, and how is that to be determined? The same penalty for a violation by a narcotic pedler would be laid on a physician who commits a minor infraction of the law, to wit, for forgetting to renew his license for a few days after it expired, and writing a prescription in that period. He would lose his practice for a year. Such a regulation would be a club held over the heads of doctors to compel them to compromise cases instead of defending themselves in court. If a trivial charge was placed against a doctor, he would readily compromise rather than run the chance of having his reputation questioned by an appearance in court on the charge of violating the Harrison act."

Dr. Woodward completed his testimony with a statement that the bill would not reach narcotic pedlers, and with a recommendation for a greater activity by the states in enacting narcotic laws directed at the addict. Horace W. Bigelow, Detroit, counsel for the American Drug Manufacturers' Association, and for Parke, Davis and Company, opposed the bill from the practical view of the manufacturer. He asserted that the expense of record keeping was enormous. "I think I can safely say," he said, "that our record keeping amounts to more than $100,000 a year. Now this bill would force us to duplicate the very records we are keeping. When we keep a record of sales to our various distributors, that record is also one of purchases for them. The bill would make us keep another record of purchases at an additional cost of perhaps $25,000 a year."

LATIN AMERICA

Next Latin American Medical Congress.—The official notice of the seventh Latin American Medical Congress has been issued, the date, March 15, 1927, at the City of Mexico. Dr. Angel Brioso Vasconcelos is secretary of the executive committee.

Personal.—Dr. G. Aráoz Alfaro, chief of the public health service of Argentina, has sailed for Europe as the representative of Argentina in the League of Nations' international health conference and the international public health office at Paris. ——*The Brazil-Medico* relates that Dr. Carlos Chagas, chief of the public health service of Brazil, has been notified that an honorary degree is to be conferred on him by the University of Paris at its convocation exercises in November.——The *Folha Medica* of Rio de Janeiro announces the arrival there of Drs. Allen Freeman and James Doull, who have been invited to deliver a course of lectures in the newly founded school of public health, as masters of sanitary administration.——The Academia Nacional de Medicina of Mexico has elected to honorary membership Dr. F. Lagrange, professor of ophthalmology, Bordeaux.——Dr. Ramón Goya of the Argentine cruiser *Buenos Aires* was tendered a banquet recently by the local medical society of Seville, Spain.——Dr. Varela Zequeira has been elected president of the national Cuban Medical Association to fill the vacancy left by the death of Dr. Juan Guiteras, who was the first president of the newly organized association. Its official title is the Federación Médica de Cuba. Dr. A. A. Aballi is president of the executive committee. The *Crónica Médico-Quirúrgica* for January is entirely devoted to the new organization, its aims and history to date.

FOREIGN

China Medical Association.—The eighteenth biennial meeting of the China Medical Association will be held at Peking, August 31-September 8, in the buildings of the Peking Union Medical College. A preliminary announcement from the chairman of the publicity committee states that the background and "motif" of the meeting will be public health, to which subject many of the general and public meetings will be devoted. The mornings will be devoted to sectional and general meetings; the afternoons to demonstrations and clinics, and the evenings to public lectures. A trip to the Great Wall of China has been arranged for the day following the conference and to other interesting places.

The German Health Week.—Extensive preparations were made for the national Health Week and exposition in Germany in April. Our exchanges state that hundreds of thousands of persons were reached by the health propaganda through the press or radio or moving pictures. Lay members of parliament expressed publicly their appreciation of the efforts of the profession to enlighten the public in matters of health. Gollwitzer of Munich, in particular, emphasized the necessity for eradicating quackery, but the *Deutsche medizinische Wochenschrift* calls attention to the way in which quackery—"radium compresses," etc.—crowded into the limelight even in the hygiene exhibition. The exhibits portraying the evils of alcohol and tobacco were stationed in the gallery above, while on the main floor booths for sale of both were attractively arranged. The government of Saxony is offering prizes to children for articles on "What the Health Week Brought to Me."

International Congress of Sexology.—The International Society of Sexology announces that its first congress will be held in Berlin, Germany, Oct. 11-15, 1926. In the scientific sections question in relation to sexual life will be discussed in regard to society, economic life, hygienics, medicine and law. The principal problems before the congress will be referred in part to committees; other questions will be allowed free discussion. The announcement, which states that the society has been completely reconstructed since the World War, gives a list of prominent members in various countries. including Lépine, Policard and Pézard of France, Recasens, Madrid, Almkvist, Stockholm, Crew, Edinburgh, Freud, Vienna, Leeuwen, Amsterdam, K. Sand, Copenhagen, C. B. Davenport, New York, and Bertrand Russell, London, besides other leaders in sexology from these and other countries. Inquiries concerning the congress should be addressed to Dr. Moll, Berlin W., Kurfürstendamm 45.

Government Services

Permanent Buildings for Army Hospital

Carrying an appropriation of $2,000,000 for continuing the construction of additional permanent buildings at the Walter Reed Hospital, Washington, D. C., the general deficiency bill has passed the House of Representatives. This appropriation authorizes the continuance of construction of additional buildings at the Walter Reed Hospital, to take the place of temporary wooden structures which have, for several years, been in use. A recent survey indicates that the foundations of the present temporary structures are found to be unsafe. Temporary repairs have been made and will continue to be made pending the substitution of the permanent structures authorized by the present appropriations.

Navy Personals

Lieuts. Waldo E. Golden, Edras J. Lanois, Wilbur O. Manning, George L. McClintock and Ashton E. Neely, Medical Corps, U. S. Navy, have been qualified for promotion to the rank of lieutenant commander.——Lieut. Comdr. Fenimore S. Johnson, Naval Hospital, New York, has been ordered to temporary duty in attendance on a course of instruction at the New York Post-Graduate Medical School and Hospital.——The following medical officers have tendered their resignations: Lieuts. Risden J. DeFord, Merrill R. Fox, McClure Scott and William H. Turnley; a later report includes also Lieut. Alan J. Chenery and Lieuts., junior grade, David L. Beers, Frederick S. Foote, and Howard E. Hill.

Appointments and Resignations in Veterans' Bureau

The following changes in personnel in the U. S. Veterans' Bureau are noted in the *Medical Bulletin* for May:

Appointments:

Dr. Louis K. Henschel, specialist in neuropsychiatry, full-time basis, assigned to the regional office in New York.
Dr. Arthur E. Rogers, medical officer (roentgenology), assigned to the hospital at Fort Lyon.
Dr. Hyman D. Shapiro, as assistant medical officer, part-time basis, central office, Washington, D. C.
Dr. Oscar O. Jones, as attending specialist in roentgenology, part-time basis, regional office at Little Rock, Ark.
Dr. Claudius M. Capps, eye, ear, nose and throat specialist, Hospital no. 103, Aspinwall, Pa., Feb. 16, 1926.
Dr. Miles F. Daubenheyer, examiner at regional office, Omaha, Feb. 2, 1926.
Dr. Manuel G. Morales, medical examiner at regional office, San Juan, Porto Rico, Feb. 13, 1926.
Dr. Ira J. Tatum, specialist at regional office, Kansas City, Mo., Feb. 15, 1926.

Resignations:

Dr. L. W. Elwood, as medical examiner at regional office, Omaha, Feb. 15, 1926.
Dr. Carroll Francis at Hospital no. 102, Livermore, Calif., Feb. 25, 1926.
Dr. John L. Hemstead, as medical examiner at regional office, Albany, N. Y., Feb. 28, 1926.
Dr. Frank W. Kern, at regional office, Louisville, Ky., as examiner in general medicine and surgery.
Dr. William B. Lunsford, at Hospital no. 52, Boise, Idaho, Feb. 10, 1926.
Dr. Earl C. MacCordy, at Hospital no. 103, Aspinwall, Pa. (ill health), Jan. 31, 1926.
Dr. Joseph R. Plant, as examiner on claims and rating board, regional office, Sioux Falls, S. Dak., Jan. 15, 1926.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 15, 1926.

Cause of Mule Spinners' Cancer

The departmental committee appointed by the home secretary to consider the evidence bearing on the occurrence of "Epitheliomatous Ulceration Among Mule Spinners" has presented its report. In the opinion of the committee, the evidence is strongly in favor of the view that this form of cancer is "due to the prolonged action of mineral oils." In other words, this cancer is an industrial hazard. The committee discusses "the substitution of an oil which is innocuous and, at the same time, suitable as a lubricant, due regard being paid to the high rate at which the spindles run." The difficulty, however, is to find the oil, and this is likely to be a prolonged task, since a double problem is involved—that of obtaining innocuous oils and that of blending these innocuous oils so as to get the desired results. In the meantime, the next most obvious remedy is to prevent the oil from coming into contact with the worker. Research is required in this matter, as it is very difficult to prevent "splash" from the bearings. The committee mentions various forms of guard, and speaks with approval of one which consists of a strip of felt or fabric attached to the inside of the wooden door in front of the bolster plate, and projecting vertically about five-eighths inch above the level of the latter plate. "Protective clothing" is not thought to be desirable for a variety of reasons, but constant cleanliness on the part of mule spinners is certainly a safeguard. Further, medical examination at intervals is necessary. The committee recommends, in the first instance, a voluntary system of examination; but if the voluntary system does not result in at least 90 per cent of the workers concerned presenting themselves for each examination, regulations should be made under the factory acts for compulsory examinations. Examinations should take place at least every four months at the factory. They should include every worker in the mule spinning room who is 30 years of age or over.

Cancer Research

At a quarterly meeting of the council of the Royal College of Surgeons of England, Sir John Bland Sutton (president) in the chair, the Walker prize of $500 was awarded to Dr. William Ewart Gye in recognition of his work in advancing the knowledge of the pathology and therapeutics of cancer during the last five years. The award was made in pursuance of the following report from the committee appointed to advise the council in the matter: "The work of Dr. Gye, which has been very materially assisted by the optical research of Mr. J. E. Barnard, F.R.S., promises to throw light on the hitherto unsolved problem of the causation of malignant diseases. Taking as his starting point the pioneer work of Peyton Rous on fowl sarcoma, Dr. Gye produced from this tumor, by different methods, two fluids. Neither of these fluids when inoculated alone produced a tumour, but an inoculation of the mixed fluids in a healthy fowl was followed by the appearance of a sarcoma. The experimenter inferred in his further work that to produce a malignant growth two factors are necessary: first, a living virus which appears to be of extreme minuteness, and, second, a chemical factor peculiar to each species of animal and effective only in that species. Dr. Gye has succeeded in cultivating this virus in vitro. Further, by a series of substitution experiments, he has shown that there can be obtained from human carcinoma and from malignant tumors of the rat and mouse a virus capable of acting with the 'specific factor' of the fowl to cause fowl sarcoma. These experiments, pursued with great patience and acumen over a long period and still in progress, suggest new and hopeful lines of attack on the problem of the cause of malignant disease. Though it cannot yet be said that they have found practical application, they have already given to cancer research such a great stimulus, and such a new direction, as to justify the committee in recommending Dr. Gye for the Walker prize."

Pushing Osteopaths

Notwithstanding the government declaration, all members of parliament have received from the British Osteopathic Association a statement setting out its case and asking "for protection to develop the principles of osteopathy" so that eventually osteopaths "may take their rightful place in the practice of healing." The association asks for a charter for a "British College of Osteopathy."

British Optical Convention

The British Optical Convention has been held at the Imperial College of Science and Technology, South Kensington. It was formally opened by the prime minister. After recalling the predominance of British work in the industry until the latter part of the nineteenth century, Mr. Baldwin outlined the causes that led to our backward position when the Great War came, and caused the government to initiate steps to safeguard optical production and to encourage research. Despite postwar difficulties, British workmanship was now turning out articles that were recognized everywhere for their technical perfection.

The president of the convention, Sir Frank Dyson, astronomer royal, said that the optical industry was almost synonymous with the advance of knowledge and the progress of science. He thought we could say now that our optical manufacturers could make the staple articles—the lenses and the binoculars, and so on—as well as anybody else, and that when they came to those scientific instruments which required a great deal of skill, but which offered very little pecuniary recompense to the optician, they could rely on them to produce what they required. While it could not be asserted that Britain held the preeminent position that it did in the early days of the science, the industry could look back with pride on its achievements and progress during the last twelve years. In 1912, Germany was supplying 60 per cent of the optical glass being used in this country, against 30 per cent made in France and 10 per cent of our own manufacture. When the war made us dependent on our own efforts, the potentiality of the British industry was well shown, and by 1918 the home demand for optical glass for all purposes, which included many new types of lenses and optical instruments requiring glasses of special optical properties, was being met by supplies of which 95 per cent was manufactured in this country. From France came the remaining 5 per cent. At that time we were making 9 tons of optical glass each month. Since the war, owing to the decreased demand, the production had, of course, been much less, but the requirements of British opticians were being met in variety of type and excellent quality.

No convention has been held since 1912, owing to the war, and the exhibition of the convention illustrates developments that have taken place in optical science and manufacture during the last fourteen years. These include new instruments and modifications or new applications of existing instruments. The optical glass industry is now carried on by three firms in this country compared with only one firm before the war, and more than a hundred different varieties of such glass are now produced. The quality of the glass is said to be not merely equal to that obtainable from other sources, but in some respects better, particularly in the matter of transparency. The instrument designed by Mr. J. E. Barnard and Dr. Gye of the National Institute for Medical Research for examining filter-passing virus was shown. The existing type of microscope has been modified for the purpose, and the optical arrangements adopted are also of an entirely new kind, ultraviolet rays being used for the examination of the organisms. The exhibits shown by the Refraction Hospital include a newly designed instrument for measuring the field of vision of the eye, and detecting the presence of any disease impairing it. An instrument has been contrived for training a "lazy" eye back to a state of efficiency. The improvements in lenses include a trifocal lens. This form of lens is intended to benefit the sight of old persons at three different distances. A lens is also shown devised to cut off hurtful rays without the use of tinting. The British Research Association for the Woollen and Worsted Industries has an exhibit which illustrates the work it is doing as a contribution toward the formation of an international standard of fastness for dyes. Progress is being made toward the goal aimed at, though this cannot yet be said to have been reached. A new method of photographic land surveying—the parallacter system—is brought to notice by Mr. J. W. Gordon. It involves the use of a special phototheodolite and of a comparator, and advantages both of cheapness and of facility are claimed for it in comparison with other photographic surveying.

The "Royal Hospitals": The "Spital Sermon"

The annual ceremony in connection with the "Royal Hospitals" is one example of the medieval customs in which this country is so rich. The Easter banquet took place at the Mansion House following the preaching of the "Spital Sermon" at Christ Church, Newgate Street, earlier in the day. A large and distinguished company, which included many representatives of the corps diplomatique, accepted the invitation of the lord mayor and the lady mayoress. Proposing the toast of "Prosperity to the Royal Hospital," the lord mayor said these numbered five. St. Bartholomew's and St. Thomas' were dedicated to the treatment of the sick, Christ's to the education of the young, Bethlem to the alleviation of the insane, and Bridewell also to the education of the young, and, in modern times, to the correction and reclamation of unruly apprentices. St. Bartholomew's dated as far back as 1123. The others were founded, either by King Henry VIII or by his son Edward VI, in the sixteenth century. They were all in existence today, in the highest efficiency and prosperity. The preaching of the Spital Sermon had always been a great feature of Easter in the city. The sermon dated to "time out of mind." It was certainly preached as far back as five centuries ago. It was originally preached in the open air—first at the Spital Cross and afterward in St. Paul's churchyard. There have been occasions when attendance at the Spital Sermon must have been rather an ordeal, for they were told that in 1671 the preacher spoke for three hours, and his sermon, when printed, occupied 230 octavo pages of 27,000 words. The Bishop of Chichester, replying, said that when Queen Elizabeth was present on one occasion at the Spital Sermon she was accompanied by two bears, and after the service attended an exhibition of bear-baiting.

The Intuitive Capacity of Children to Understand Spoken Language

In the *British Journal of Psychology,* Dr. J. W. Tomb, chief medical officer of the Asansol mines' board of health, discusses a subject of great interest. Why is it, he asks, that, whereas British parents in India are usually only just able—or sometimes unable—to acquire a conversational knowledge of an Indian language, their children can often understand two or three Indian vernaculars simultaneously? The capacity of children to understand spoken language, Dr. Tomb concludes, is intuitive and is not a function of intelligence; it is a function of the subconscious mind. Whereas the adult finds the greatest difficulty in learning a new language by the exercise of his reasoning and memorizing faculties, the young child picks it up intuitively. It is commonly assumed that children learn a language as adults do, by the conscious memorizing of parts of speech, moods and tenses, but this cannot be so in the ordinary case of infants learning their mother tongue, the parts of speech, moods and tenses of which cannot be consciously apprehended by them as such, or their use explained to them through the medium of language since they possess none. Moreover, children are universally able to converse freely in their mother tongue without any appreciation of its grammatical construction, which in civilized countries they afterward learn by tedious years of study at school. Infants, therefore, must possess the capacity of intuitively bestowing the correct meanings on the sounds (i. e., words) used in their hearing. In the district in Bengal in which Dr. Tomb resides, he frequently sees English babies of from 9 to 18 months receiving directions and instructions from their mothers in English, from their ayahs in Bengali, and from the house servants in Hindustani, obviously understanding what is being said to them in all these languages long before they themselves are able to speak. Infants appear to comprehend languages in whole sentences, which they endeavor to reproduce in extenso; but, owing to the undeveloped condition of their cerebral cortex and particularly of the speech center, they are unable to do so, merely as a rule producing some simple and easily articulated word belonging to the whole. It is also a common experience of Dr. Tomb to hear English children of 3 or 4 years who have been born in the country conversing freely at different times with their parents in English, with their ayahs in Bengali, with the garden coolies in Santali, and with the house servants in Hindustani, while their parents have learned with much laborious effort just sufficient Hindustani to comprehend what the house servants are saying (provided they do not speak too quickly) and to issue simple orders to them. It is even not unusual to see English parents in India unable to understand what their servants are saying to them in Hindustani, and being driven in consequence to bring along an English child of 4 or 5 years, if available, to act as interpreter. Dr. Tomb describes the case of an English girl, aged 4, who had a Tamil-speaking ayah, her permanent ayah, a Bengali, being ill for two months. Within that period and without any apparent effort, the child was able to understand what the ayah was saying to her in Tamil and to converse with her in that language. Moreover, the child continued to speak occasionally in Tamil to the other servants for some time after her Tamil-speaking ayah had gone away, apparently not recognizing that she was speaking to them in a language which they did not understand. Such a case as this can be satisfactorily explained only on the hypothesis that the child "intuitively" and subconsciously placed the correct meanings on the various sounds (words) in Tamil which the ayah used to her in conversation, and was unaware of any difference between the various languages (English, Bengali, Santali, Hindustani, Tamil) that she was able to speak.

Rockefeller Foundation Gift

The Medical School of St. Thomas' Hospital has received a gift of $75,000 from the Rockefeller Foundation toward the building of new laboratories for the education of the students. The laboratories will be situated within the hospital and will be easily accessible from the wards. The medical school has for some time past been considering the question of providing permanent quarters for the students' laboratory, up to now situated in old army huts, and has to this end put by $75,000, but has been unable to begin the building until a further sum of $75,000 could be provided. The generous gift of the Rockefeller Foundation will enable the erection of the laboratories to be begun at once on a site provided by the hospital.

BUDAPEST

(From Our Regular Correspondent)

May 5, 1926.

Deplorable Conditions in the Roumanian Universities

The idea of the numerus clausus, or percentage quota, which caused distress among university students in Hungary, has spread to Roumania. But, whereas in Hungary the quota allows the admission of a few Jewish students, in Roumania Jewish students have been barred and the universities closed for more than a year so that students of all creeds have lost two semesters. Mr. I. Yevin, who came to Roumania to study the situation in the universities, writes in a recent number of a leading weekly paper that the first thing that strikes one about the university building in Bucharest or Jassy is that it is surrounded by soldiers. Each Jewish student was surrounded on entrance and was offered the alternative of being thrashed or of signing a document that he voluntarily withdrew from the university and would not attend any more lectures. Many, faced with this alternative, have signed the declaration.

The professors and lecturers are intimidated. The university officials are at the mercy of the antisemitic student bodies, says Yevin.

When the university senate decided to expel the ringleaders of the disturbances, the minister of education vetoed the decision. When the council of professors intervened on behalf of the Jewish professor Dr. Reiner, who was insulted by his students and compelled to keep away from the university, the minister of education asked for a statement from the students; they supplied a memorandum and the matter was closed.

The new examination system introduced by the department of education has proved an effective bar to the majority of Jewish students.

Distribution of Prizes in the Medical Society

The Budapest Royal Medical Society held its general meeting some days ago. In his opening address the president, Dr. Koloman Buday, announced that the society must depart from its custom of distributing monetary prizes among those who had recently contributed valuable scientific works to Hungarian medical literature. This time the society is in a position to give only diplomas of merit because of depreciation of the currency. The Balassa and Meszarosf funds before the war amounted to $6,000. The interest on this amount was then $500. Now the interest is worth only a cent and a half. "We entertain the hope," concluded the president, "that the winners of this year's competition will not regard the diplomas of merit handed to them as mere sheets of paper but that they will value this distinction, which joins their names to those of their glorious predecessors who earned the admiration of the Hungarian medical profession, and the entire world. Diplomas of merit have been awarded to Professor Michael Lenhossék for his textbook, "The Anatomy of Man"; Tivadar Bársony and Béla Hortobágyi, for their work on the duodenal pyloric reflex; Andor Bosányi, for researches on the pathogenesis of rachitis; Lászlo Csáky and Béla Molnar, for work on the thesis that hyperacidity is a disturbance of salt metabolism; Francis Kiss, for his research on the histology of the blood vessels; Joseph Duzár, for investigation of the hormone treatment of chorea minor; Louis Bakay, for his work on the replacement of the esophagus; George Gortvay, for his views on the social hygienic protection of workmen; Hugo Preisz, for investigations on bacteriophagy. The board of the society has elected as corresponding members Profs. John Howland, Baltimore; Ernest Graham Little, London; Leonard Findlay, Glasgow; F. Biedel, Prague; Jose Brito y Foresti, Montevideo; I. van Holve, Leyden; C. Neuberg, Berlin

BERLIN

(From Our Regular Correspondent)

April 24, 1926.

The Congress of Internal Medicine

This letter continues my report on the annual session of the Deutsche Gesellschaft für innere Medizin held in Wiesbaden, April 12-15 (THE JOURNAL, May 29, p. 1710).

THE BLOOD AS CLINICAL REFLECTOR OF SOMATIC PROCESSES

Prof. V. Schilling of Berlin, in his paper on "The Blood as the Clinical Reflector of Somatic Processes," made the following statements: The morphologic study of blood processes has been practically completed. However, the most recent conception, the reticulo-endothelial monocyte system, needs to be inquired into further. The division of the blood processes and of blood diseases as clinically separable processes within the scope of these systems has been found tenable: systemic reactions and systemic affections are characteristic of the changes in blood pathology. Differentiation of the systems must, however, be studied not only from the morphologic but also from the functional standpoint. The characteristic shapes of the cells are an indication of their peculiar capacities and functions. Even minute departures from the normal in blood make possible deductions as to the histologic changes in the hematopoietic organs. For that purpose a large number of critical observations on histologic material are already available whereby the connections between the peripheral blood picture and the changes in the extensive hematopoietic regions of the body have been adequately explained. Not only researches on the minute details of internal cell structure, so-called "intracellular pathology," but also the study of humoral colloid changes point out new ways for the elucidation of the functional significance of those changes. The processes which control the leukocyte apparatus may be regarded as parallels of the "inflammation processes." They comprise nervous and vascular, colloido-chemical and chemical, hormonal and endocrine changes or disorders. The pathologic process is an accentuation of normal controls and a modification that meets the new demands of the pathologic environment. The clinical scope of these blood processes comprises, medically, latent disturbances that have not yet manifested themselves as "disease"; regular associated conditions of very many and manifold disease processes—especially those of an infectious and toxic nature, and on down to the cardinal aspects of the "blood diseases." The best form of research has been the study of the microscopic blood preparation, extended in special cases, when the need was felt, by the actual cell counts, a few special color tests, certain auxiliary methods, such as the sedimentation test, the determination of resistance, colorimetry, and physical and chemical supplementary tests. In the large majority of cases, however, the skilled investigator can recognize from the single, carefully scrutinized blood preparation not only the cytologic modifications of the peripheral blood picture but also the signs of the inner histologic changes and the modified functions of the organism, and thus gain an insight into the momentary status of the vital processes in the deeper tissues. Repeated observation will reveal to him the course of reactions, which take place according to definite "laws" though they may not always be understood. Blood examination is coming to be a continuous study of cellular pathology on the living organism. The skilled clinician should get from these observations, which he must associate with the general condition of the patient, an idea concerning the nature and the course of the disease process. That this is possible, in the main, through the application of simple principles, although much is yet to be learned, is shown by the practical results of internal medicine, surgery, gynecology, pediatrics and tropical pathology, and many investigations, conducted with great care, in such specialties as tuberculosis, the hygiene of sport activities, inoculation malaria and recurrent fever, and the control of various forms of treatment.

During the discussion, Stettner of Erlangen observed in a child shifting of the blood picture to the right and relative lymphocytosis, which permit a differentiation according to age. Arneth of Münster regards shifting of the blood picture to the right as equally important with shifting to the left. He demands the observation of the nuclei and protoplasm and a uniform acceptance of his system by investigators. The reaction phases of Schilling he regards as reaction types. Curschmann of Rostock reported on the resistance of hemoglobin to sodium hydroxide. In pernicious anemia, an increased resistance is noted.

GENEVA

(From Our Regular Correspondent)

May 15, 1926.

Death Following Rapid Absorption of Fluid of Edema

A case of sudden death from rapid absorption of the fluid of edema occurred recently at the medical clinic of the University of Geneva (service of Prof. Roch). A man, aged 68, a cardiorenal subject, had been energetically treated with diuretics for some time, but without avail. Then suddenly, without any apparent cause, a formidable diuresis ensued following a dose of theophylline sodio-acetate, which up to that time had been ineffective. Sudden death followed. The pathogenesis of the process is not clear. Dr. Illitch, who studied this case, after summarizing the various theories, takes up the theory of anaphylactic shock. According to this theory the disturbances are due not merely to a sudden excessive loss of fluid, but above all to a colloidoclastic shock resulting from the passage of the serum in the tissues into the circulation. The albumins contained in the fluid of edema have, in respect of the albumins of the blood serum, the same action as heterogenous albumins foreign to the blood. This theory explains why the accidents never ensue when the serous fluid is eliminated, even in large amounts, by puncture or blistering. It also explains why disturbances develop before the onset of diuresis from mere mobilization of the fluids of the edema. The analogy between the clinical accidents of absorption and those of anaphylactic disturbances is remarkable, to such a degree that following mobilization of the fluids of edema the fundamental signs of anaphylactic shock are encountered, viz.: a fall of the blood pressure, transitory massive albuminuria and leukopenia.

Blood Calcium

Calcium in the blood has recently been the object of research work by Dr. E. Wyss at the surgical clinic of the University of Geneva. Being in perfect health, Wyss experimented on himself. For two days he took 6 Gm. of calcium phosphate, and then 8 Gm. daily for five days, a total of 52 Gm. in one week. On the eighth day the blood contained calcium as follows:

8 a. m. (fasting)	0.146 per cent
10:15 a. m.	0.142 per cent
2:30 p. m. (after lunch)	0.140 per cent
6:15 p. m.	0.146 per cent

Wyss found that the calcium content of the blood when the salt was not ingested varied between 0.168 and 0.106 per cent. When the salt was ingested, the calcium content of the blood averaged 0.142 per cent.

Wyss next experimented with calcium in fractures. In five cases he was able to increase the calcium content of the blood, although in one instance, in spite of continued ingestion, the blood content dropped to normal. He concludes also that sex influences the calcium content of the blood; in men it varies from 0.12 to 0.165 per cent; in women, from 0.11 to 0.126 per cent. Age has no influence. Puberty in the female decreases the content. The content is physiologically variable from one hour to another, and is low during digestion. Trauma does not decrease the calcium content during the process of cicatrization. Ordinary fractures or pseudarthroses have no effect on the calcium content. Calcium treatment stabilizes the content in healthy subjects and may increase it for a time, but does not prevent reestablishment of the normal even when treatment with the salt is continued.

Dr. Hugo Oltramare of Geneva showed that sudden change of diet involving a marked decrease of the calcium intake reduces the calcium content of the blood, but this is only temporary. Treatment with lime-water, when the calcium blood content is normal, produces a temporary increase at the beginning of treatment. The calcium content of food in a normal diet seems to be always sufficient. Therefore a low blood calcium content must be explained by either disturbed assimilation or a disturbed metabolism. The ingestion of fresh thyroid gland appears to throw a large quantity of lime into the circulation.

Sex Education

In an address on "Sexual Education During the Years of School Life," Dr. J. Golay of the Faculty of Geneva said that sexual education had become a necessity. If numerous attempts so far undertaken had been fruitless, it is because the necessity of this teaching has not penetrated the public mind, and also because too much moralizing has been done. Golay suggests that teaching should dwell on birth, sex and venereal disease. A child should be frankly told that his mother carried him within herself and this knowledge will develop filial respect and will show reproduction as a sacred function. The child should be taught the reproduction in plants and then in animals, thus progressively ascending the series. Thus the child will grasp the great laws of fecundation and will know that the majority of living organisms can be reproduced only by a conjugation of the male with the female element. Young people should know about puberty. Boys should be taught to avoid those excesses which injure both morals and the body. Girls are to be warned against seductions, and they should be given a clear understanding of their future duties by developing in them their maternal instinct. The adolescent should know that if he gives way to sexual perversions and onanism he will have the greatest difficulty in giving up the habit. If, in spite of the teaching, parents detect something abnormal in the child, they must speak seriously without frightening the child.

Many physicians and educators recommend diverting the sexual instinct by occupations requiring an expenditure of physical strength, such as sports and life in the open. Dr. Golay thinks it is an error to suppose that physical exercise kills the instinct. Intense intellectual work is, perhaps, the best substitute, but since the laws of hygiene prohibit this in young people, the child must be taught to use his will power. Between 16 and 18 years of age is the time to instruct young people in the pathology of venereal disease. The public should be made to understand that these diseases are not shameful per se. Therefore children will understand that they can confide in their parents, with the result that proper treatment will be undertaken while the disease is still curable.

In public lectures on venereal diseases it is usual to dwell lengthily on their disastrous consequences, probably for the purpose of fright; but morality obtained by fright is no longer morality. For that matter, the phobia of the sexual act does not lead, as might be supposed, to chastity but to perversions. The object of sexual education is to develop morality by a healthy and normal comprehension of natural phenomena and make our sons conscious of their duties and responsibilities.

Marriages

John Bernard Thompson to Mrs. Florence Foley, both of Wittenberg, Wis., March 22.

Andrew Christiansen, St. Paul, to Miss Olive Hamburg of Minneapolis, in April.

Daniel N. Williams to Miss Frances Blair, both of Chattanooga, Tenn., recently.

Deaths

Jesse Leland Boogher ⊕ St. Louis; Washington University Medical School, St. Louis, 1892; formerly professor of genito-urinary surgery, Barnes Medical College; member of the American Urological Association; secretary of the Section on Diseases of Children, of the American Medical Association, 1898-1899; aged 58; died, April 17, at the Missouri Baptist Sanitarium, following an appendectomy.

Henry Beates, Jr. ⊕ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1879; for many years president of the state board of medical examiners and formerly president of the Federation of State Medical Examining and Licensing Boards; member of the Philadelphia Pathological Society; aged 68; died, May 25.

Gordon Bryan Crowell, Lincolnton, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1922; member of the Medical Society of the State of North Carolina; served during the World War; on the staff of the Lincolnton Hospital, where he died, May 9, of influenza and peritonitis, aged 30.

Thomas W. Rogers, New London, Conn.; Medical Department of Columbia College, New York, 1890; member of the Connecticut State Medical Society; formerly on the staff of St. Luke's Hospital, New York; aged 72; died, May 19, of cerebral hemorrhage and arteriosclerosis.

Carlos A. Fish, Frankfort, Ky.; Southwestern Homeopathic Medical College and Hospital, Louisville, 1901; member of the Kentucky State Medical Association; aged 51; died, in May, at a sanatorium in Battle Creek, Mich., of heart disease following influenza.

Albert Leonard Bennett, Denver; University of Colorado School of Medicine, Denver, 1897; for many years on the staff of the Mercy Hospital; formerly a medical missionary in China and Africa; aged 62; died, May 5, at Chicago, of pneumonia.

Frank M. Virtue ⊕ Sulphur Springs, Ohio; Western Reserve University School of Medicine, Cleveland, 1887; president of the Crawford County Medical Society; member of the school board; aged 62; died, in May, of heart disease.

Peter MacNaughton, Brockville, Ont.; Trinity Medical College, Toronto, 1888; member of the American Psychiatric Association; medical superintendent of the Ontario Hospital for the Insane; aged 67; died, March 7, of pneumonia.

Ten Eyck Olmstead Burleson, Bath, N. Y.; University of Buffalo Department of Medicine, 1880; for ten years connected with the New York Soldiers' and Sailors' Home; aged 72; died, May 13, of cerebral hemorrhage.

Franklin Campbell Jillson ⊕ Boston; Medical School of Harvard University, Boston, 1886; served during the World War; aged 62; on the staff of the Faulkner Hospital, where he died, May 7, following a long illness.

Hiram E. Connor, Brookhaven, Miss.; Harvey Medical College, Chicago, 1900; formerly lecturer on genito-urinary diseases, at Flint Medical College of New Orleans University; aged 48; died, February 23, of pneumonia.

James L. Fuller, Warrensburg, N. Y.; Dartmouth Medical School, Hanover, N. H., 1882; formerly member of the state legislature; president of the North Creek National Bank, aged 70; died, May 15, of thrombosis.

Hugh D. Hamilton ⊕ Kansas City, Mo.; Missouri Medical College, St. Louis, 1898; served during the World War; on the staff of St. Joseph's Hospital, where he died, May 14; aged 53, of carcinoma of the kidney.

Edward L. Welbourn, Union City, Ind.; Eclectic Medical College of Pennsylvania, Philadelphia, 1866; for many years secretary of the board of health; aged 83; died, May 6, at Los Angeles, following a long illness.

Ralph Steiner ⊕ Austin, Texas.; University of Maryland School of Medicine, Baltimore, 1883; formerly state health officer, and president of the state board of health; aged 67; died, May 2, of pernicious anemia.

Caleb J. McNulty, Washington, Pa.; Western Reserve University School of Medicine, Cleveland, 1869; Civil War veteran; formerly a druggist; aged 85; died, April 29, of pneumonia following influenza.

Russell Franklin Benson, Jr. ⊕ Troy, N. Y.; Medical Department of Columbia College, New York, 1876; New York Homeopathic Medical College, New York, 1877; aged 74; died, March 28, of pneumonia.

William C. Looney, Normandy, Tenn.; University of the South Medical Department, Sewanee, 1900; mayor of Normandy; aged 69; died, April 7, at a hospital in Shelbyville, following a long illness.

Ripley C. Hoffman ⊕ Deming, N. M.; Jefferson Medical College of Philadelphia, 1883; past president of the Luna County Medical Society; formerly mayor; aged 66; died, May 7, of heart disease.

Harry George Macdonald ⊕ Hackensack, N. J.; College of Physicians and Surgeons, Baltimore, 1903; served during the World War; on the staff of the Hackensack Hospital; aged 46; died, May 19.

William Edward Sharp, Pascagoula, Miss.; Mississippi Medical College, Meriden, 1909; member of the Mississippi State Medical Association; aged 52; died, March 16, of general paralysis.

Grandison C. Edwards, Hookerton, N. C.; Bellevue Hospital Medical College, New York, 1883; member of the Medical Society of the State of North Carolina; aged 68; died, May 8.

Austin John Blanchard, Jamaica, N. Y.; Long Island College Hospital, Brooklyn, 1892; formerly on the staff of St. Mary's Hospital, New York; aged 69; died, May 9, of cerebral hemorrhage.

John Howard Vorhes ⊕ Columbus, Ohio; Ohio State University College of Medicine, Columbus, 1912; served during the World War; aged 38; died, in April, of tuberculous meningitis.

George M. Combest, Lamar, Okla.; College of Physicians and Surgeons, Dallas, Texas, 1905; served during the World War; aged 59; died, February 10, of carcinoma of the stomach.

William David Morrison Bell, Ottawa, Ont., Canada; University of Bishop College Faculty of Medicine, Montreal, Que., 1882; aged 67; died, March 14, of cerebral hemorrhage.

Maro Johnson Love, Bloomingville, Ohio; Long Island College Hospital, Brooklyn, 1871; formerly member of the state legislature; aged 78; died, April 12, of valvular heart disease.

Frank H. Kimball, Rockford, Ill.; Chicago Medical College, 1880; aged 70; formerly on the staff of the Rockford City Hospital; where he died, May 8, following a long illness.

Henry Gwynn Branham, Baltimore; Maryland Medical College, Baltimore, 1905; aged 42; was drowned, in May, when he fell into a shallow spring at Okahumpka, Fla.

Julius Rudisch, New York; University of Heidelberg, Germany, 1874; for many years on the staff of Mount Sinai Hospital; aged 78; died recently, at Doylestown, Pa.

W. J. Barker, Trenton, Tenn.; Memphis Hospital Medical College, 1901; member of the Tennessee State Medical Association; aged 50; died recently, of pneumonia.

Isaac A. Bigger ⊕ Rock Hill, S. C.; Medical College of the State of South Carolina, Charleston, 1889; aged 58; died, May 6, at Cedar Crest, following a long illness.

Edward Jerome Ziegler, Oxford, Wis.; Milwaukee Medical College, 1911; member of the State Medical Society of Wisconsin; aged 42; died, April 23, of appendicitis.

James H. J. Flynn ⊕ New Haven, Conn.; Yale University School of Medicine, New Haven, 1895; aged 52; died, April 26, of angina pectoris and coronary embolism.

John Baker Morris, Lewiston, Idaho; St. Louis Medical College, 1874; for ten years mayor of Lewiston; aged 75; died, March 26, of carcinoma of the liver.

George B. Hennigh, Perkasie, Pa.; Baltimore Medical College, 1891; formerly postmaster of Sykesville; aged 63; died, April 6, of carcinoma of the liver.

Mary Augusta Brown Girard, San Francisco; Northwestern University Woman's Medical School, Chicago, 1883; aged 90; died, May 15, of chronic myocarditis.

Mont H. Cassidy, Milan, Mich.; Michigan College of Medicine and Surgery, 1892; aged 70; died, April 30, at Monclova, Ohio, of cerebral hemorrhage.

James J. Coppedge, Lone Oak, Texas; University of Louisville School of Medicine, 1887; formerly a minister; aged 78; died, April 29, of pancreatitis.

Abraham S. Gish, Abilene, Kan.; Eclectic Medical College of Pennsylvania, Philadelphia, 1869; aged 82; died, April 25, of cerebral hemorrhage.

Albin Wilshire Lipscomb, New Market, Ala.; Vanderbilt University Medical Department, Nashville, 1896; died, April 28, of pneumonia.

Allen Corson Cowperthwaite, Los Angeles; Hahnemann Medical College of Philadelphia, 1869; aged 77; died, March 1, of chronic myocarditis.

Frederick Lucian Brigham, Wolcott, Vt.; Dartmouth Medical School, Hanover, N. H., 1887; aged 64; died recently, of cerebral embolism.

Joseph Trimble Ricker, Loveland, Ohio; Eclectic Medical College of the City of New York, 1871; aged 77; died, May 4, at Epworth Heights.

William C. Baker ⊕ Hummelstown, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1874; aged 76; died in April.

Charles Campbell Moffett, Elyria, Ohio; Western Reserve University School of Medicine, Cleveland, 1890; aged 58; died, March 17.

William Henry Bourns, Frankville, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1892; aged 64; died, March 11.

Charles H. Siegrist ⊕ Uhrichsville, Ohio; Ohio Medical University, Columbus, 1896; formerly a druggist; aged 58; died, April 30.

Frank C. Combes ⊕ New York; Bellevue Hospital Medical College, New York, 1883; aged 63; died, April 18, of cerebral hemorrhage.

William I. Swangem, Terrell, Texas: University of Louisville (Ky.) School of Medicine, 1890; aged 69; died, March 4, of paralysis.

Charles Sumner Fischer, New York; Long Island College Hospital, Brooklyn, 1887; aged 60; died, May 13, of pneumonia.

William H. Hinkle, Degraff, Ohio; Medical College of Ohio, Cincinnati, 1886; aged 77; died, April 9, of general paralysis.

Edward Felix Hixon, Vancouver, Wash.; Victoria University Medical Department, Toronto, 1884; aged 70; died, April 26.

Hugh Kennedy Hyndman, Exeter, Ont., Canada; Western University Medical School, London, 1886; aged 62; died, March 6.

Laurent S. Mitchell, New York; New York Homeopathic Medical College and Hospital, 1895; died, May 10, of heart disease.

Charles Aronson, Los Angeles; Tufts College Medical School, Boston, 1916; aged 30; died, April 6, of brain tumor.

Samuel E. Hassell, Lancaster, Wis.; Hahnemann Medical College and Hospital, Chicago, 1872; aged 78; died, April 25.

Charles William Bonar, West Liberty, W. Va.; (licensed, West Virginia, 1881); aged 77; died, March 3, of senility.

John Andrew Taulbee, Mounds, Okla.; Kentucky School of Medicine, Louisville, 1889; aged 77; died in March.

George Sherman Haswell, Watervliet, N. Y.; Albany Medical College, 1892; aged 57; died, April 28.

John L. Goff, Litchfield, Neb. (licensed, Nebraska, 1891); aged 80; died, March 16, of lobar pneumonia.

Frank Scott, Rogers, Ohio; Cleveland Medical College, 1877; aged 81; died, May 18, of pneumonia.

Edward O. Smith ⊕ Winfield, Kan.; Keokuk (Iowa) Medical College, 1895; aged 57; died in April.

George W. Callis, Dyer, Tenn.; Memphis Hospital Medical College, 1885; aged 78; died, February 23.

Milton W. Sparks, Terre Haute, Ind.; Louisville National Medical College, 1896; died, March 31.

CORRECTION

Frank M. Baldwin.—The late Dr. Frank M. Baldwin, whose obituary was published in THE JOURNAL, May 22, resided at Blanchester, Ohio, instead of Columbus.

Correspondence

POSTMORTEM RECORDS OF HOSPITALS

To the Editor:—We have read with a great deal of interest the article by Christian (THE JOURNAL, May 15) entitled "Selecting a Hospital for Internship."

At the outset, we wish to subscribe heartily to the statements as to the importance of necropsies and their value as a teaching medium, both for the staff and for the interns. The Newark Beth Israel Hospital, with an active 125 bed general service, of which about 60 per cent are ward beds, is supported by the Jewish Community but is nonsectarian in its policies, treating about 45 per cent of non-Jewish patients. During the year 1925 there were 182 deaths in the hospital, in thirty-eight of which, or 20.9 per cent of all deaths (both private and ward), necropsies were held.

Realizing the importance of necropsies and desirous of getting a greater percentage of our deaths to the postmortem room, we undertook a vigorous campaign among the physicians sending patients to the hospital, and among the lay public of our community, in an endeavor to do away with the prevalent, traditional prejudice against the performance of necropsies. In addition, Jan. 1, 1926, we established a routine to make sure that the relatives of all persons dying in the hospital would be interviewed for the purpose of obtaining permission for a necropsy. A form must be filled out in every death, either granting or refusing this. In difficult cases, the pathologist or the attending physician, or both, is called in in an effort to convince the relatives of the importance of this final examination.

Since adopting this plan, we have had to date seventy-three deaths, of which thirty-seven have come to necropsy. Of these deaths thirty-four are Jewish with seventeen necropsies, and thirty-nine are non-Jewish with twenty necropsies. These figures show that whatever religious scruples might exist against necropsies, they are not very strong and that careful and sympathetic arguments can overcome them.

PAUL KELLER, M.D., Superintendent,
MAX DANZIS, M.D., Chief of Staff,
ASHER YAGUDA, M.D., Pathologist,
Beth Israel Hospital,
Newark, N. J.

THE OMENTUM

To the Editor:—I note with interest your current comment on the omentum (THE JOURNAL, April 24). I wish to suggest that it never has been proved that peristalsis or change in position of the body will cause the omentum to move. In fact, it has been proved that it does not. When an area becomes inflamed, the omentum becomes hyperemic followed by exudation and leukocytic extravasation. Then and not until then does the omentum move. When the omentum begins to move, peristalsis has already ceased because of the inflammatory reaction within the gut walls. (Compare "Causes of the Migration of the Omentum," THE JOURNAL, April 26, 1913, p. 1292). ARTHUR E. HERTZLER, M.D., Halstead, Kan.

CONTROL OF NARCOTICS

To the Editor:—Following suggestions in THE JOURNAL of recent date, we have sent a letter to President Coolidge, the Committee on Ways and Means, the Committee on Finance of the U. S. Senate, the Secretary of the Treasury, Hon. William Williamson, Hon. W. H. McMaster, and Hon. Peter Norbeck protesting against S. 4085, which was introduced in Congress, April 24, at the instance of the Treasury Department. We have had a reply from our congressman, William

Williamson, and from one of our senators, Peter Norbeck, in which they say that S. 4085 has not been called to their attention by protest before ours. They both assure us that they will look into the proposed questionable legislation. I am wondering whether you should not put forth further effort to stir physicians up in this matter.

C. F. Morsman, M.D., Hot Springs, S. D.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SHELL SHOCK

To the Editor:—Kindly give me the prevailing opinion as to the definition of "shell shock." Is shell shock ever caused in a perfectly normal person, one who has seen something of life, one who has been tried, one with a perfectly good family history? Is it, or is it not, a sign of "weak brother"—an unstable character? Do we, or do we not, see a similar condition in soldiers who were not under fire?

West Virginia Inquirer.

Answer.—Histologic study of the nervous systems of men who had died after being subjected to the explosion of a shell without signs of external bodily injury revealed certain changes that were attributed to concussion. From this observation it was concluded that many of the heterogeneous symptoms of nervous disorder observed in nonfatal cases might be due to changes of the same character, and they were consequently called shell shock. The occurrence of exactly similar symptom complexes, however, without exposure to shell explosions even among men in camp in America who had never seen a shell fired, the fact that "shell shock" was not observed among men captured as prisoners even though many of them had been blown up by shells and more or less seriously injured, and the results that were obtained from clinical study and psychotherapy in men classed as "shell shock" demonstrated conclusively that this term was a misnomer and the title was officially discontinued soon after the United States entered the war by the Surgeon General of the army. Instead, these cases were classified as neuroses or psychoneuroses entirely comparable to the similar conditions arising in civilian life, and the essentially mental nature of the disorders was recognized. Probably the best description of the nature of these disabilities is that which characterizes them as a means of escape from an intolerable situation.

The conception of "a perfectly normal person" is quite untenable. Normality of a person, that is to say of the man as a whole, can mean nothing else than successful adaptation to the surroundings in which he is placed. Man must struggle for the satisfaction of his instinctive longings and needs with the circumstances of whatever may happen to be his social environment from time to time. No one method of securing satisfaction can be said to be "normal," though some methods will be more satisfactory than others. Probably the best answer to the question can be given by pointing out that men broke down with psychoneuroses (or "shell shock") at every stage of the army career from enrolment to rehabilitation in civil life. In spite of the successive eliminations of persons unable to make the grade of the "intolerable situations" encountered during the successive steps, large numbers of psychoneuroses developed even among men in the firing line, men who, on the whole, may be regarded as a group of the healthiest and "most normal" of the young manhood of the nation. It is true that studies of family histories revealed a greater proportion of "nervous taint" among those who broke down than among those who did not, but it must also be remembered that there are few families in which such taints cannot be found if sought. It also seems justifiable to conclude that persons who are least well equipped by inheritance and training for facing difficulties will break down under the smallest stress, but what weight should be given to breeding and how much to training is not known; the fact that more than 90 per cent of the men at the front who developed psychoneuroses were able to return to duty within three months under treatment by measures that were essentially training or educational in nature must be considered highly significant.

There is no essential difference between the psychoneuroses developing in the army and those that arise in civil life. The circumstances surrounding the man at the time are different and the nature of the "intolerable situations" is different, so that the actual symptomatology is likely to vary. It may be pointed out here that the psychoneuroses among ex-service men today have arisen not on the basis of war difficulties but rather on those inherent to readjustment to civilian life, even though, as would be expected, the army experience is used in the construction of the particular symptoms presented.

Recognition of the nature of these disorders came largely from experience during the World War. It is impossible, therefore, to compare statistically the frequency in that with those in the Civil War. But that similar psychoneuroses were common in the latter is well known and, in illustration, attention may be called to the reports of Da Costa on functional heart troubles in Civil War soldiers.

INFANTILE TETANY

To the Editor:—I should like to know the symptoms of infantile tetany and treatment of a case in a boy, aged 18 months. Please omit name.

M.D., Pennsylvania.

Answer.—Tetany is frequently associated with rickets. The condition occurs most frequently toward the close of winter and in the early spring months. Carpopedal spasm is one of the early symptoms. This is a tonic spasm that involves the hands or feet. The hands assume the so-called obstetric position, with the fingers and thumb approximated and with contracture at the wrist. The arms are often held against the chest. The lower extremities are not always involved, but if they are there is flexion at the knee joint and the feet are held in the position of equinovarus. Occasionally edema of the dorsal surfaces of the hands and feet occurs.

Generalized convulsions are of common occurrence and may be observed in the latent type of the disease as well as in the manifest. The spasm generally starts in the muscles of the eye and face and then rapidly extends to the extremities. Relaxation occurs soon after the convulsion, and consciousness returns almost immediately. In this way the convulsions of tetany differ from epileptic seizures.

Laryngospasm is a characteristic symptom and may occur early in the affection. It consists of a peculiar crowing inspiratory sound. Laryngospasm may be followed by convulsions.

In addition to these symptoms there are several characteristic signs. These may be observed in the latent type of the disease. The Trousseau phenomenon is elicited when the arm above the elbow is constricted. When this occurs, the child's hand will assume the contracted tetany position. The Chvostek sign is elicited by tapping the cheek over the superficial course of the facial nerve. If tetany is present, lightning-like contractions occur over all parts of the face controlled by the facial nerve. The Erb phenomenon represents a hyperexcitability of peripheral nerves, as determined by the use of the galvanic current.

It has been definitely shown that the calcium content of the blood is materially reduced in cases of tetany. In contradistinction to this, the phosphorus is almost always reduced in rickets.

Children suffering from active tetany should be given 1 Gm. of calcium chloride by mouth every four hours for the first two days. If the symptoms subside, 0.65 Gm. of the drug should be given four times a day for three or four days, and then from 0.3 to 0.65 Gm. three times a day for two weeks. If convulsions occur, chloral hydrate and calcium bromide should be used in appropriate doses. Ultraviolet irradiation seems to cause an increase of the serum calcium and is undoubtedly of value in these cases. Four cubic centimeters of cod liver oil two or three times daily should also be given, particularly in view of the fact that rickets and tetany are usually coexistent.

ENDOTHELIAL SYSTEM—DOROTHY REED CELL

To the Editor:—Kindly define the following terms: (1) reticulo-endothelial system of the skin; (2) the Dorothy Reed cell in Hodgkin's disease. Kindly omit name.

M.D., Connecticut.

Answer.—1. The reticulo-endothelial system, as described by Aschoff and Landau (1913), includes ordinary endothelial cells, fibrocytes, reticular cells of the spleen and lymphoid tissues, the reticulo-endothelium of the spleen, lymph and marrow sinuses, of the lung, suprarenal and hypophysial capillaries, the Kupffer cells of the liver, the histiocytes or clasmatocytes and the splenocytes and blood monocytes, named in the order of increasing phagocytic properties by which they are generally recognized. In the corium and subcutaneous connective tissue there would be the endothelium of the capillaries and lymph spaces, reticular cells, fibroblasts and the highly phagocytic clasmatocytes, which were described by Ranvier as long, branching cells with oval nuclei and finely granular cytoplasm and are evidently the same as some at least of the macrophages of Metchnikoff. These different cells, all of mesodermal origin, are not highly differentiated, and under proper stimulus any one seems to be able to produce any of the other forms. The extent of this system, the number of cells that may become actively phagocytic in the whole cutaneous organ, is incalculable. Pursuant on their phagocytic function there is evidence also that these cells produce such substances as bilirubin from hemoglobin and antibodies. Textbooks on diseases of the skin have practically no reference to this system, so the more general studies must be consulted.

2. In recent writing the term "Dorothy Reed cell" appears only occasionally. Therefore, the general medical reader will find difficulty in identifying the cell among the several unusual types characteristic of the disease. MacCallum, in "A Text Book of Pathology," third edition, page 859, although he does not use the name Dorothy Reed cell, describes it as follows: "Among these cells there are found much larger ones which constitute the most characteristic feature of the lesion. These are really quite large cells, and while they vary greatly, are many times the size of the lymphocytes. Their protoplasm is clear except for scattered, irregular stainable shreds, and their outline is rather ragged. They contain one or two or several large nuclei, which are rounded or indented or lobed and usually lie close together. These nuclei are very sharply outlined with a deeply staining chromatin membrane, within which the nuclear substance is relatively sparsely granular. In each nucleus there is a large nucleolus, sometimes two, and these nucleoli stand out very clearly with a deep stain." Dr. Reed's description of the lesions of Hodgkin's disease appeared in *Johns Hopkins Hospital Reports* (**10**:133, 1902), under the title "The Pathological Changes in Hodgkin's Disease."

VISIBILITY OF SIGNS

To the Editor:—I should like information regarding the visibility of different colors for street signs. Which would be the most visible:

White letters on black background
White letters on blue background
Black letters on white background
Black letters on yellow background?

T. W. ASHLEY, M.D., Kenosha, Wis.

ANSWER.—The visibility of different colors for street signs would depend to a great extent on the illumination under which the street signs were to be seen. In general, black letters on a white background would offer sharper contrast than any other combination, particularly in diffuse daylight. But this offers the disadvantage that in the average city where the street signs would be used, there is so much smoke in the atmosphere that the white background soon becomes a dirty gray and the contrast is lost. This holds true to a lesser extent of other backgrounds. White letters on a blue background form a favored combination in many cities, and seem to retain their contrast despite atmospheric dirt fairly well.

EFFECT OF SMOKING ON BREAST MILK

To the Editor:—I have a patient with a 4 weeks old baby. The mother is an inveterate cigaret smoker. The baby has diarrhea from no apparent cause. I have stopped the mother's smoking. I wondered whether nicotine could be excreted through the breast milk. What effect would this have on the baby's bowels?

JOSEPH HALTON, M.D., Sarasota, Fla.

ANSWER.—In nursing mothers who smoke excessively, nicotine may be found in the breast milk. Since diarrhea is one of the symptoms of nicotine poisoning in adults, it might conceivably occur in infants also. Lesage asserts that wetnurses who smoke or chew tobacco can poison the babies they nurse and the symptoms produced are digestive disturbances, restlessness, dyspnea, bradycardia, syncope, collapse and death. However, such a result must be a great rarity; for in the experience of one of the leading pediatricians in the country, no harm has ever been observed in babies nursed by mothers who smoke inordinately. Heavy smokers, as a rule, cannot nurse their babies very long.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.

ARIZONA: Phoenix, July 6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

CALIFORNIA: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

COLORADO: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

CONNECTICUT: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

DELAWARE: Wilmington, Regular Board and Homeo. Board, June 15-17. Pres., Dr. H. W. Briggs, Wilmington.

FLORIDA: St. Petersburg, June 14-15. Sec., Dr. H. M. Rowlett, Box 603, Tampa.

GEORGIA: Atlanta, June 9-11; Augusta, June 1-3. Sec., Dr. C. T. Nolan, Marietta, Ga.

INDIANA: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.

IOWA: Iowa City, June 8-10. Commissioner of Health, Dr. Don M. Griswold, State Capitol, Des Moines.

KANSAS: Kansas City, June 15. Sec., Dr. Albert S. Ross, Sabetha.

KENTUCKY: Louisville, June 24-26. Sec., Dr. A. T. McCormack, 532 West Main Street, Louisville.

MAINE: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

MARYLAND: Baltimore, Reg. Bd., June 15-18. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 15-16. Sec., Dr. Joseph S. Garrison, Old Orchard Rd., Ten Hills, Baltimore.

MASSACHUSETTS: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

MICHIGAN: Ann Arbor, June 8-10. Detroit, June 14-16. Sec., Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, June 15. Sec., Dr. A. E. Comstock, 734 Lowry Bldg., St. Paul.

MISSISSIPPI: Jackson, June 24-25. Sec., Dr. F. J. Underwood, Jackson.

MISSOURI: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.

NATIONAL BOARD OF MEDICAL EXAMINERS: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec., Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.

NEBRASKA: Omaha, June 8-10. Director, Bur. of Exam. Bds., Mrs. Clark Perkins, Lincoln.

NEW JERSEY: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, Room 1101, Trenton Trust Bldg., Trenton.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, June 21-25. Sec., Dr. K. P. B. Bonner, Morehead City.

NORTH DAKOTA: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.

OHIO: Columbus, June 8-11. Sec., Dr. H. M. Platter, Columbus.

OKLAHOMA: Oklahoma City, June 15-16. Sec., Dr. J. M. Byrum, Shawnee.

OREGON: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 6-10. Director Prof. Education, C. D. Koch, Harrisburg.

RHODE ISLAND: Providence, July 1-2. Sec., Dr. B. U. Richards, 315 State House, Providence.

SOUTH CAROLINA: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA: Custer, July 20. Director, Med. Lic., Dr. H. R. Kenaston, Bonesteel.

TENNESSEE: Memphis, Nashville and Knoxville, June 11-12. Sec., Dr. Alfred B. De Loach, 434 Madison Ave., Memphis.

TEXAS: Austin, June 15-17. Sec., Dr. T. J. Crowe, 918 Mercantile Bank Bldg., Dallas.

UTAH: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

VERMONT: Burlington, June 23. Sec., Dr. W. Scott Nay, Underhill.

VIRGINIA: Richmond, June 16-19. Sec., Dr. J. M. Preston, 720 Shenandoah Life Bldg., Roanoke.

WASHINGTON: Olympia, July 6. Director, Dept. of Licenses, Mr. Charles R. Maybury, Olympia.

WEST VIRGINIA: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.

WISCONSIN: Milwaukee, Basic Science Board, June 12-13. Sec., Dr. M. F. Guyer, Madison. Regular Board, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

WYOMING: Cheyenne, June 7-9. Sec., Dr. G. M. Anderson, Cheyenne.

Minnesota January Examination

The Minnesota Board of Medical Examiners reports the oral, written and practical examination held in Minneapolis, Jan. 5-7, 1926. The examination covered 15 subjects and included 80 questions. An average of 75 per cent was required to pass. Forty-three candidates were examined, all of whom passed. Six candidates were licensed by reciprocity and 2 by endorsement of their credentials. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent
Stanford University School of Medicine	(1925)	89.8
[illegible] School of Medicine	(1924)	91
[illegible] ersity Medical School	(1924)	90
[illegible] Medical School	(1925)*	82.3, 89.2, 91.4

Rush Medical College	(1925)* 89.3 (1925)	90.4
University of Minnesoto Medical School	(1924) 92, (1925)	92.8
(1925)† 84.5, 84.8, 85.4, 85.9, 86.1, 86.7, 86.8, 87.6, 87.7, 88, 88.1, 88.3, 88.6, 88.7, 88.7, 89, 89.2, 89.2, 89.3, 89.6, 90, 90, 90.3, 90.9, 92.4, 93		
St. Louis University School of Medicine	(1922) 90, (1925)	89
Washington University School of Medicine	(1925)	86.4
Columbia Univ. Coll. of P. and S	(1917) 88.6 (1918)	91.5
Medical College of the State		85.8
McGill University Faculty of		90

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Northwestern University Medical School	(1916)	Illinois
Tufts College Medical School	(1909)	New Hamp.
University of Michigan Medical School	(1924)	Michigan
University of Nebraska College of Medicine	(1925)	Nebraska
University of Pennsylvania School of Medicine	(1924)	N. Carolina
Medical College of Virginia	(1921)	Virginia

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
State University of Iowa College of Medicine	(1916)	N. B. M. Ex.
Harvard University	(1923)	N. B. M. Ex.

* These candidates have finished their medical courses and will receive their M.D. degrees on completion of a year's internship in a hospital.

† These candidates have finished their medical courses and received their M.B. degrees and will receive their M.D. degrees on completion of a year's internship in a hospital.

Ohio Reciprocity Report

Dr. H. M. Platter, secretary of the Ohio State Medical Board, *reports that 13 candidates were licensed by reciprocity* at the meeting held April 6, 1926. The following colleges were represented:

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Indiana University School of Medicine	(1924)	Indiana
University of Louisville School of Medicine	(1921, 2) (1924)	Kentucky
College of Physicians and Surgeons, Baltimore	(1902)	Maryland
University of Maryland School of Medicine	(1920)	Penna.
Boston University School of Medicine	(1892)	New York
Barnes Medical College, St. Louis	(1897)	W. Virginia
Creighton University College of Medicine	(1923)	Nebraska
Jefferson Medical College of Philadelphia	(1914)	Maine
Medico-Chirurgical College of Philadelphia	(1914)	Penna.
Meharry Medical College	(1923)	Tennessee
University of Toronto Faculty of Medicine	(1924)	Michigan

Book Notices

A MANUAL OF THE PARASITIC PROTOZOA OF MAN. By Charles F. Craig, M.D., M.A., Lieutenant-Colonel, Medical Corps, U. S. Army, D.S.M. Cloth. Price, $7. Pp. 569, with 95 illustrations. Philadelphia: J. B. Lippincott Company, 1926.

Among workers in this country no one is better fitted by training and experience than Dr. Craig to write a useful, comprehensive and comprehensible work on the human parasitic protozoa. The friendly attitude with which one turns to an examination of the book is abundantly confirmed by its contents. The generous volume proves to be a mine of valuable information. One can hardly overemphasize today the importance of protozoan parasites in human medicine. The parasites of malarial fevers, amebic dysentery, trypanosomiasis, kala-azar, and various other even more recently discovered forms are recognized generally as among the most important causes of human disease. Yet it is hardly a generation since the epoch-making discoveries concerning the malarial organism and its transmission were announced, and at that time even the names of other organisms were mentioned rarely, if at all, in works on medicine. The extreme newness of the field makes it all the more difficult for a medical man to handle the material he may find, and if such a worker sought to orient himself in the general field, he would be compelled to depend, in large part at least, on publications in other languages than English. The present work summarizes an immense amount of accurate data concerning the various parasitic protozoa found in man. It introduces also those closely related parasitic forms from lower animals, the similar species of the coprozoic fauna and even the free-living types that have to be taken into account in accurate, differential diagnosis. While the work is definitely designed for the use of teachers, medical practitioners, students and health officials, and while it emphasizes very rightly the clinical significance of the various species and their definite relations to human disease, it is also reasonably well supplied with technical information of the zoological and biologic type. The author gives under each organism data concerning the correct name and the various synonyms, the history of the discovery and study of the organism, its structure, habits, reproduction, life history, distribution, the method of transmission, experimental infection and relation to disease, as well as the pathology, prophylaxis and diagnosis. At the end of each chapter is given in abbreviated form an admirable list of references to the important researches of recent date on the species in question. This list is reasonably complete from the standpoint of the original sources, and will be extremely valuable for all students of the subject. This feature is ordinarily entirely lacking in textbooks, and, even when present, is rarely if ever carried out with the care and completeness shown in this work. Considerable space has also been devoted to the methods of cultivating, staining and studying the various parasitic protozoa. Some of the illustrations are very fine; most of them are good, but a few are really illegible and, like figure 65, are even crude. A valuable feature in the treatment of the subject is the presentation of careful data concerning free-living species that are likely to be confused with parasitic organisms. The history of these early years in the study of parasitic protozoa is full of confusion that has arisen through accidental contamination of the material collected for examination. More than one form has been described like *Vahlkampfia lobospinosa,* which was "believed to be a dysentery ameba, but is a typical free-living species and is now known to have nothing to do with the etiology of dysentery" (p. 124). If Dr. Craig's effort accomplished nothing further than to prevent the recurrence of such confusion as has arisen in this and similar cases, all the time and effort put on the preparation and publication of this work would be amply justified as a contribution to scientific medicine. It is entirely natural to find the individual views of the author cropping out from point to point. Thus, one would find it difficult to secure general approval of the statement that "the production of symptoms by *Endameba histolytica* depends *entirely* on the lack of resistance of the infected individual to the infection" (p. 51). But why discuss such minutiae? In view of the great mass of valuable material which the author has brought together in this work, it will be many years before the subject is handled again by one of equal experience and ability. Indeed, Dr. Craig states that the material has accumulated during an experience of about thirty years in the study of these organisms and of about ten years spent in teaching the subject. On the whole, the treatment has been broad and fair and will commend itself to the careful student of the subject. Dr. Craig is to be congratulated on having produced a valuable work.

RÖNTGENBEHANDLUNG INNERER KRANKHEITEN. Von Prof. Dr. W. Parrisius, Privatdozent an der Med. Univ.-Klinik, Tübingen. Paper. Price, 15 marks. *Pp. 227, with 54 illustrations.* Leipsic: S. *Hirzel, 1926.*

The author first discusses the theory of the production of roentgen rays and the essentials of filtration. A section on the physical and biologic methods of measuring the rays leads to a chapter on deep dosage, in which appear the Holfelder patterns, which, placed on the body, locate the various organs and indicate the dosage. The clinical part of the book reviews the literature and presents the experience of the author. He quotes experiments establishing the fact that the hematopoietic organs are highly susceptible to the influence of the roentgen rays. The reaction of the blood and of the spleen is discussed. In chronic myelocytic leukemia, the author is convinced, no true cure can be achieved by radiotherapy. He cautions against it in acute cases, and even in chronic cases the dosage has to be chosen with extreme care. In lymphatic leukemia heavy doses are indicated, and roentgen-ray therapy has to be abandoned if the erythrocytes diminish. In lymphogranuloma there are occasionally favorable results; also in lymphosarcoma. Excisions for diagnostic purposes are not favored. In polycythemia rubra vera the author emphasizes the necessity of applying intense doses to the bones one by one so as to avoid injury to the large glandular organs by a flooding of the entire body with rays. Leukopenia is a danger signal With these precautions, some of the results are encouraging. In hemolytic icterus there were no convincing results, but irradiation is justifiable to provoke a hemolytic attack for diagnostic purposes. In localized tuberculosis, especially if the foci are on or near the surface, good results may be expected, though a direct bactericidal action of the rays cannot be established. In pulmonary tuberculosis, the rays accelerate the natural healing process. The stationary or slowly progressing cases and the cirrhotic and nodular forms respond to treatment. Caverns are not a contraindication, but all pneumonic exudative and acutely progressive forms are unsuitable for treatment. Only diminished doses should be employed. Tuberculosis of the larynx is amenable to treatment, provided there is no high fever and no accentuated tuberculosis of the lungs. In cases with deep ulcerations, irradiation is contraindicated. The dosage must be low, as heavy dosage produces edema, hoarseness and grave necrosis. The author does not favor irradiation in tuberculosis of the bones and joints. In bronchitis and bronchial asthma, no convincing results were reported. In cases of simple hypertrophy of the thymus, results have been satisfactory, but in complications ascribed to thymus disturbances, such as psoriasis or osteomalacia, the results are doubtful. The situation with regard to exophthalmic goiter is not clear, but irradiation in simple parenchymatous goiter is considered useless. No appreciable results were obtained on the suprarenals or pancreas. Roentgen-ray therapy in disturbances of the nervous system has produced a host of publications of contradictory character. Irradiation of prostatic hypertrophy may produce temporary results but cannot be brought in successful competition with surgery. Gonorrheal arthritis is the only form that seems to offer a favorable field. Reports on results in gastric ulcer are not encouraging. In glomerulonephritis, irradiation occasionally exerts a pronounced favorable influence on oliguria; but the operator should bear in mind that the skin of a patient with nephritis is very susceptible to roentgen-ray burns. Irradiation of the liver may produce late necrosis. The use of roentgen rays in tonsillar hypertrophy is not recommended. The closing chapter is devoted to a discussion of the general malaise that frequently follows roentgen-ray treatment.

Medical Diagnosis. For the Student and Practitioner. By Charles Lyman Greene, M.D., Chief of Staff, St. Luke's Hospital, St. Paul. Sixth edition. Cloth. Price, $12. Pp. 1468, with 723 illustrations. Philadelphia: P. Blakiston's Son & Co., 1926.

This edition is presented because of the rapid advances in many fields of medicine, both clinical and laboratory. The author begins with a fine plea for honesty and open mindedness in the practice of medicine, showing by many examples the errors and blind spots that may mislead us. Then follow chapters on history taking and external examinations, with pointers on estimating the value of evidence thus obtained. Following this, each system of the body is reviewed, with complete consideration of physical and laboratory findings and the diseases of this system. Thus follow excellent chapters on the basic facts of heart action with work, polygraph and electrocardiagraph, and all the other organs or systems are similarly treated. The volume is large and complete. For both student and medical practitioner it is admirably suited as either a reference work or as a volume for diligent study. Throughout there is much of an individual and personal note, and the reader feels that the author is making every effort to instruct him in such a way that he will not err in his conclusions. One rarely finds in a single volume the wealth of material here contained.

Handbuch der gesamten Augenheilkunde. Von Th. Axenfeld und A. Elschnig. Lieferung 488-490. I. Teil, I. Band, 2 Abt., Kapital III. Mikroskopische Anatomie der Regenbogenhaut. Von M. Wolfrum. Paper. Price, 16.50 marks. Pp. 218, with 57 illustrations. Berlin: Julius Springer, 1926.

It would scarcely seem possible that one could write more than 200 pages about the microscopic anatomy of that minute bit of colored tissue, the iris, without delving deeply into the physiology and comparative anatomy. Nevertheless, the author has succeeded in producing the most exhaustive purely anatomic description that exists in medical literature. The first fifty pages are devoted to the gross description of the iris, and include the clinical appearance as seen with the slit lamp of Gullstrand. Thirty pages are then given to the microscopic technic and method of collecting material for the microscopic study of the iris. The remainder of the book is a wonderful description of the histologic appearance of the iris, with magnificent illustrations, principally from the author's seemingly endless collection. The developmental phase and the comparative phase of the microscopic anatomy are touched on only when pertinent, and no undue attention is devoted to these. A bibliography of nine pages is appended. This is a book that should be read by every ophthalmologist and should occupy a handy place on his reference shelves. The printing and proof reading is on the same high plane as is the rest of the handbook; the illustrations are excellent, and the paper cover tears off easily.

Industrial Fermentations. By Paul W. Allen, M.S., Ph.D., Professor of Bacteriology and Head of Department, University of Tennessee. Cloth. Price, $5 net. Pp. 424, with illustrations. New York: Chemical Catalog Company, Inc., 926.

The primary purpose of this book is to correlate in a general way some of the present information on the application of micro-organisms to industry. The author states that he is making no attempt to treat the subject exhaustively, and, with the number of processes described—thirty-one—no other recourse would be possible in a book of this size. Mechanical steps having little to do with microbiology are described briefly, if at all. Fermentations are thus discussed: (1) prevention of undesirable changes, as in bottled and canned goods, drinking water and meat products; (2) reactions achieved by fermentation and not feasible by another process. as in the manufacture of bread; (3) reactions produced more economically than by other processes, as in the manufacture of alcohol. The author has included a great deal of original material, and each chapter is followed by a bibliography of the material consulted. In the description of some of the processes, one receives the impression that it would have been advantageous to include more of the mechanical operation. The type and magnitude of some of the apparatus employed in many of the fermentation industries is usually nothing short of marvelous to one who is accustomed to observe micro-organisms under the microscope. In discussing the method of determining the phenol coefficient, on page 71, a typographic error has been made. In the sentence which now reads "at the end of which time readings of growth or no growth are made and entered in a table as — or + signs, respectively," the signs should be reversed. Food preservation processes are fully discussed. The control of undesirable fermentations in the dairy industry has extensive treatment, and an account of the bacteriologic control of milk is included. Although many chapters in the book are concerned with the prevention of undesirable fermentations, the major part of the monograph is devoted to productive fermentations. There are numerous illustrations. The book is commended to those who would obtain a survey of the importance of fermentation, with particular emphasis on industrial processes.

The Natural Increase of Mankind. By J. Shirley Sweeney, M.A., M.D., D.Sc. Cloth. Price, $4. Pp. 185. Baltimore: Williams & Wilkins Company, 1926.

This work, which was Dr. Sweeney's thesis for his doctorate of science degree in hygiene at Johns Hopkins, is in chief part a statement of the problems of biometry and an introduction to the study of the scientific treatment of the factors that influence the trends of population. It is therefore not a popular treatise on the subject of population, but it is an interesting statement of the facts of population and the methods for their scientific treatment that have lately been emphasized. Altogether, it is a very informing book and can be commended to any one who is interested in this subject. Not the least interesting part is the introduction by Dr. William H. Welch, in which Dr. Welch, as always, is suggestive and in which he illustrates in this field the encyclopedic character of his scholarship. The increase of mankind is one of the fundamental problems of society in which medicine is involved. This book would furnish a good introduction for any physician who wishes to make a thorough study of the subject.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Blood Chemistry: Colorimetric Methods. For the General Practitioner; with Clinical Comments and Dietary Suggestions. By Willard J. Stone, B.Sc., M.D., Attending Physician, Los Angeles General Hospital and Pasadena Hospital. Introduction by George Dock, M.D. Second edition. Cloth. Price, $3.25 net. Pp. 129, with 7 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Technic and interpretation of laboratory tests with practical suggestions.

Human Physiology. By John Thornton, M.A. Revised by William A. M. Smart, M.B., B.S., B.Sc., Department of Physiology, London Hospital Medical College, University of London. Third edition. Cloth. Price, $3.75. Pp. 463, with 281 illustrations. New York: Longmans, Green & Co., Ltd., 1926.

British textbook of unusual brevity and little adapted to American curriculums.

Handbuch der praktischen Therapie als Ergebnis experimenteller Forschung. Herausgegeben von Reinhard von den Velden, A. O. Professor an der Universitat Berlin, und Paul Wolff, Dr. Med. et Phil., Berlin. Erster Band. Erste und Zweite Halfte. Paper. Price, 66 marks. Pp. 1137, with illustrations. Leipsic: Johann Ambrosius Barth, 1926.

First parts of a new and expansive German compilation on therapeutics.

The National Formulary. By Authority of the American Pharmaceutical Association. Prepared by the Committee on National Formulary of the American Pharmaceutical Association. Official from July 1, 1926. Fifth edition. Buckram. Price, $3.50. Pp. 545. New York: Chemical Catalog Company, 1926.

Newest edition of official manual for druggists.

The White Man in the Tropics: With Especial Reference to Australia and Its Dependencies. By R. W. Cilento, M.D., B.S., D.T.M. & H., Director, Australian Institute of Tropical Medicine. Commonwealth of Australia, Department of Health. Service Publication (Tropical Division) Number 7. Paper. Pp. 168, with illustrations. Melbourne, 1926.

Helpful hints for those tropically inclined.

Geschlechtskrankheiten bei Kindern. Ein ärztlicher und sozialer Leitfaden für alle Zweige der Jugendpflege. Herausgegeben von A. Buschke und M. Gumpert. Paper. Price, 5,40 marks. Pp. 108, with 10 illustrations. Berlin: Julius Springer, 1926.

Brief consideration of venereal diseases in children from medical and social points of view.

Talks to Nurses on Dietetics and Dietotherapy. By Ruth Wheeler and Helen Wheeler, The State University of Iowa. Cloth. Price, $1.50 net. Pp. 184. New York: W. B. Saunders Company, 1926.

Simple lectures for junior nurses, with especial reference to general principles rather than emphasis on details of individual diets.

Modern Methods in the Diagnosis and Treatment of Heart Disease. By Francis Heatherley, M.B., B.S., F.R.C.S., Superintendent Heart Clinic, Manchester. Second edition. Cloth. Price, $3.75. Pp. 269. New York: William Wood & Co., 1926.

Well written essays based on large experience in the school of Mackenzie.

A Manual of Normal Physical Signs. By Wyndham B. Blanton, B.A., M.A., M.D., Associate in Medicine, Medical College of Virginia. Cloth. Price, $2.50. Pp. 215. St. Louis: The C. V. Mosby Company, 1926.

An outline for students in physical diagnosis establishing the normal.

General Anæsthesia: A Text Book for Students and Practitioners of the Art of Anæsthesia. By Dr. James G. Poe, M.D., Lecturer on General Anæsthesia in the Medical and Dental Departments of Baylor University. Cloth. Price, $2.75. Pp. 150, with 7 illustrations. Dallas: The author, 1926.

Brief practical outline of technic by specialist in anesthesia.

A Joy Ride Through China for the N. A. C. By Cora E. Simpson, R.N. Cloth. Price, $3 Mex. Postage extra. Pp. 263, with illustrations. Shanghai: The Kwang Hsueh Publishing House.

A nurse's description of nursing in China.

Chininum Scriptiones Collectae anno 1924. Amsterdam: Bureau for Increasing the Use of Quinine, 1925.

Collected literature on quinine.

Health Hazards of Brass Foundries: I. Field Investigations of the Health Hazards of the Brass-Foundry Industry. II. Laboratory Studies Relating to the Pathology of Brass Foundrymen's Ague. By John Arthur Turner, Ph.G., M.D., Acting Assistant Surgeon, United States Public Health Service, and L. R. Thompson, Surgeon, United States Public Health Service. Prepared by Direction of the Surgeon General. United States Public Health Service, Public Health Bulletin No. 157. Paper. Price, 20 cents. Pp. 75, with illustrations. Washington: Government Printing Office, 1926.

Studies in Natural Illumination in School Rooms: Parts I and II. A Report on the Observations of Daylight Illumination of Selected Classrooms of Different Orientation During the Period of an Entire School Year. By Senior Surgeon Taliaferro Clark, United States Public Health Service, and Physicist Arthur F. Beal, United States Public Health Service. Prepared by Direction of the Surgeon General. United States Public Health Service, Public Health Bulletin No. 159. Paper. Price, 15 cents. Pp. 57, with illustrations. Washington: Government Printing Office, 1926.

Medicolegal

Virginia Sterilization Act Held Constitutional

(Buck v. Bell (Va.), 130 S. E. R. 516)

The Supreme Court of Appeals of Virginia says that the appellant, by her guardian and next friend, complained of a judgment of the circuit court by which Dr. Bell, superintendent of the State Colony for Epileptics and Feebleminded, was ordered to perform on her the operation of salpingectomy, for the purpose of rendering her sexually sterile. At the time she was committed to the colony she was 17 years old, had the mind of a child 9 years old, was the mother of an illegitimate child of defective mentality, and her mother had theretofore been committed to the same colony as a feebleminded person. Unless sterilized by surgical operation, she must be kept in the custodial care of the colony for thirty years, until she became sterilized by nature, during which time she would be a charge on the state. If sterilized under the law, she could be given her liberty and secure a good home, under supervision, without injury to society. Her welfare and that of society would be promoted by such sterilization.

The judgment complained of was rendered by the circuit court on an appeal from an order of the special board of directors of the colony directing that the appellant be sterilized by the surgical operation of salpingectomy, the superintendent of the colony having presented a petition for such order. The proceeding was strictly in conformity with the statute. But it was contended that the judgment of the court was void because the Virginia sterilization act was repugnant to the provisions of the state and federal constitutions in that it did not provide due process of law, imposed a cruel and unusual punishment, and denied the appellant and other inmates of the state colony the equal protection of the law. However, the act complies with the requirements of due process of law. An adjudication by an impartial tribunal, vested with lawful jurisdiction to hear and determine the questions involved, after reasonable notice to the parties interested and an opportunity for them to be heard, fulfils all the requirements of due process of law. Nor could the contention that the statute imposed cruel and unusual punishment be sustained. The act is not a penal statute. The purpose of the legislature was not to punish but to protect the class of socially inadequate citizens named therein from themselves, and to promote the welfare of society by mitigating race degeneracy and raising the average standard of intelligence of the people of the state.

Nor does the statute deny to the appellant and to other inmates of the state colony the equal protection of the law. It was not controverted that the state may, in proper cases, by due process of law, take into custody and deprive the insane, the feebleminded and other defective citizens of the liberty which is otherwise guaranteed them by the constitution. The right to enact such laws rests in the police power. Under statutes providing for compulsory vaccination, a surgical operation is performed, as in the instant case, for the good of the individual and of society. Such statutes, although they applied to school children only, have been upheld. It cannot be said that the act divides a natural class of persons into two, and arbitrarily provides different rules for the government of each. The two classes existed before the passage of the sterilization act. The female inmate, unlike the woman on the outside, was already deprived of the power of procreation by segregation, and must remain so confined until sterilized by nature, unless it is ascertained that her welfare and the welfare of society will be promoted by her sterilization under the act. There can be no discrimination against the inmates of the colony, since the woman on the outside, if in fact feebleminded, can, by the process of commitment, and afterward a sterilization hearing, be sterilized under the act. The court is of the opinion that the Virginia sterilization act is based on a reasonable classification, and is a valid enactment under the state and federal constitutions. The court has found no case involving similar statutes wherein the court has held that the state is without power to enact such laws, provided it be exercised through a statute that affords due process of law and equal protection of the laws to those affected by it. In the New Jersey case of *Smith* v. *Board of Examiners of Feebleminded, Epileptics, etc.*, 85 N. J. Law, 46, 88 Atl. 963, which this court declines to follow, the right to sterilize did not, as in Virginia, depend on whether the welfare of the patient would be promoted by the operation.

A Medical School Held Not to Be a Public Charity

(Hall v. College of Physicians and Surgeons (Mass.), 149 N. E. R. 675)

The Supreme Judicial Court of Massachusetts says that this action was in tort in two counts to recover damages for the conscious suffering and death of the plaintiff's intestate, alleged to have been caused by negligent medical care and treatment of the defendant's servants and agents while she was a patient, or by the negligent administration of certain drugs and medicines. The jury returned a verdict for the plaintiff on each count, and this court holds that the plaintiff was entitled to judgment on the verdicts, the action having been reported on the question of whether or not the defendant corporation was a charitable corporation within the intent of the law.

The defendant corporation was organized under "an act concerning associations for religious, charitable, educational and other purposes." The charter stated that the corporation was formed "for the purpose of establishing and maintaining a college for the prosecution and promotion of educational, scientific and medical purposes." A statute authorized and empowered it to confer the degree of doctor of medicine. The charter, however, did not of itself make the defendant a public charity. The controlling purpose must be for the common and public benefit, and if the defendant was created by the incorporators, or thereafter was administered and maintained by their successors for money-making, this essential element was lacking even if the defendant may at times have expended money for purposes, or rendered gratuitous services, which in common speech are called charitable. The defendant still would be acting within its charter powers if it charged every student in full for tuition, and clinical patients for medical care and treatment.

An announcement of the college stated that a limited number of suitable persons who gave satisfactory evidence of their inability to pay the regular college fees might be enrolled as students, and that it was hoped that as many friends of the college as were able would provide funds to aid deserving students. A physician who testified that he had general charge of the college, and his wife, who was its treasurer, were the principal witnesses. He testified that the college was in full operation in 1917, performing all the functions of a medical school, and that there was a dispensary—a corporation—which occupied part of the building in which the college was located, to which dispensary students of the college were assigned. The dispensary was advertised in the catalogue to make the college more attractive to students, and, while there was a great deal of charitable work done at the dispensary, three fourths of the patients were not charitable patients, and the remunerations of the professors were enhanced because of the dispensary, which was not conducted for profit. The income of the college was derived principally from fees of students, and in part from a trust fund under a will, with some minor donations. The college was educating men and women in the science of medicine and surgery, "just like other medical colleges, and sold nothing for profit." Tabulations of the treasurer for the years 1912 to 1917 showed only moneys received from students and payments to professors and instructors and to herself and her husband during that period. If, without deciding, it be assumed, as the defendant contended, that there was evidence that it was a public charity, yet the jury, under appropriate instructions, could find that the college was conducted primarily for the private ends of those who managed it.

Question Not Tending to Blacken Patient's Character

(Skruch v. Metropolitan Life Ins. Co. (Pa.), 131 Atl. R. 186)

The Supreme Court of Pennsylvania, in reversing a judgment obtained by the plaintiff on an insurance policy which the defendant company had issued in her favor on the life of her husband, says that the defendant alleged that the insured had given false answers to certain questions which were material to the risk, as that he had never had convulsions; and "affections, none." A physician who had attended him was asked to state whether or not he had treated the insured for epilepsy or convulsions. The trial court excluded the question because the physician had indicated to the court that the specific disease of which the insured was suffering was a loathsome one, of which epilepsy and convulsions were only symptoms. This ruling was based on the Pennsylvania act of 1907, which provides that no person authorized to practice physics or surgery shall be allowed, in any civil case, to disclose any information which he acquired in attending a patient in a professional capacity, and which was necessary to enable him to act in that capacity, which shall tend to blacken the character of the patient, without the consent of the patient. But it is clear that, if a man has had convulsions and epilepsy, he has had them whether or not they were symptoms of some other disease. Yet the insured had denied that he had ever had them, and the question which was overruled was asked for the purpose of showing that he had thus made untrue answers in his application. Admittedly, a man may have had either or both of those complaints without this fact, if known, tending in any way to blacken his character. If the defendant, having received an affirmative answer to the question propounded, had then attempted to follow it up by an inquiry which, if answered, would have shown that the convulsions and epilepsy were symptoms of a loathsome disease, the act of 1907 would have been applicable, and an objection to the later inquiry would have been properly sustained. That, however, was not the question asked.

Second Conviction—Proof with Regard to License

(State v. Deadwyler (S. C.), 130 S. E. R. 332)

The Supreme Court of South Carolina, in affirming a judgment of conviction, says that it appeared from the testimony that the defendant was a chiropractor. On the first Monday in November, 1924, there were two indictments found against him for practicing medicine without a license. The first charged that he practiced on one Pruitt and other persons, Nov. 1, 1923, and divers other days before and after that date. The second indictment charged that he committed a like offense by practicing on one Bill Edwards and other persons, May 28, 1924, and on divers other days before and after that date. The defendant was tried at the November, 1924, term of court, was convicted, and served his sentence. He was put on trial at the summer term of 1925, under the second indictment. He demurred to the indictment, on the ground that the trial and conviction had at the November, 1924, term of court embraced all matters prior to that date, as to time and persons, and constituted a bar to the last indictment; but the demurrer was overruled, and conviction followed. The statute under which the indictments were brought provided that each day of its violation should constitute a separate offense; and this court does not agree with the contention that the use of the words "of divers other days before and after said date" embraced all of the time prior to the finding of the true bill under the indictment, and that the words "upon one Bill Edwards and other persons" embraced all persons up to such time, and that the conviction not only embraced the conviction for practicing on Pruitt, but on all other persons and at all other times prior to that date. The proving of the date of the commission of the act in this case was not material. It was only to allege with certainty the person on whom the defendant practiced. This was done by naming "one Bill Edwards," and this was sufficient.

Nor does the court agree with the contention that it was error to allow a member of the state board of medical examiners to testify, over objection, that the defendant had not obtained a license from the state board of medical examiners, the error alleged being that the witness was permitted to testify from his own knowledge, instead of producing the records of the board. The defendant said that it was incumbent on the state to show that he did not have a license. No question was raised as to the proof of the fact that he did practice on one Bill Edwards. It was made unlawful to do so, by statute, without having a license. This being so, while it was necessary to make the negative averment in the indictment, the act having been proved, it was incumbent on the defendant to show that he had a license. Even if the testimony of the member of the board should not have been admitted, the defendant could not complain. He knew whether he had a license and could have produced it, and he offered no testimony. But this court is of the opinion that there was no error in admitting the testimony of the member who testified that the defendant had not taken the examination of the board, had never appeared before the board, had not been granted any regular license to practice, nor granted a license to practice any specialty, such as chiropractic or osteopathy, or any separate part of the business of practicing; had never been granted any kind of license. This in no way altered the rule that the best evidence must be produced. One can always speak of his own knowledge of substantive facts within his knowledge. He must know the facts, and, knowing them, can relate them.

Unnecessary Averments in Indictment

(Robinson v. State (Ala.), 106 So. R. 203)

The Court of Appeals of Alabama, in affirming a judgment of conviction of defendant Robinson, says that the indictment in this case was returned at the January, 1922, term of the circuit court, and that the trial thereunder was held in February, 1925. The indictment charged the defendant with the offense denounced by section 7564 of the code of 1907, as amended in 1915, which prohibits any person from treating or offering to treat diseases of human beings without having obtained a certificate of qualification from the state board of medical examiners. The only question presented on this appeal was the action of the trial court in overruling demurrers to the indictment. All that is necessary in an indictment properly to charge this offense is:

> The grand jury of said county charge that, before the finding of this indictment, A. B. (naming the defendant) did treat or offer to treat diseases of human beings in this state without having obtained a certificate of qualification from the state board of medical examiners, against the peace and dignity of the state of Alabama.

Such averments in the indictment as were here contained, namely, by a system known as chiropractic for a reward, are not necessary to a valid indictment. As stated, the offense denounced is treating, or offering to treat, human diseases, without a certificate of qualification from the state board of medical examiners; and, the quoted averment, "by a system known as chiropractic for a reward," is not an element of the offense. The phrase in the statute, "by any system of treatment whatsoever," is no part of the description of the offense. However, as to the unnecessary averments, above mentioned, in the indictment in the case at bar, they in no manner vitiated the indictment. They very probably subjected the indictment to proper demurrer, but the demurrers interposed here did not raise the question. The demurrers that were interposed to the indictment were properly overruled.

Society Proceedings

COMING MEETINGS

American Ophthalmological Society, Hot Springs, Va., June 14-16. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.

American Orthopsychiatric Association, New York City, June 5-6. Dr. Karl A. Menninger, Mulvane Building, Topeka, Kansas, Secretary.

American Psychiatric Association, New York City, June 8-11. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.

American Psychopathological Association, New York City, June 11. Dr. Sanger Brown II, 173 East 70th Street, New York City, Secretary.

American Therapeutic Society, Philadelphia, June 10-12. Dr. W. J. Mallory, 1720 Connecticut Ave., N. W., Washington, D. C., Secretary.

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.

Maine Medical Association, Poland Springs, June 10-12. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

Massachusetts Medical Society, Springfield, June 8-9. Dr. W. L. Burrage, 182 Walnut Street, Brookline, Secretary.

Medical Library Association, Ann Arbor, Mich., June 8-9. Miss Harriet Wilson, 535 North Dearborn Street, Chicago, Secretary.

Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

National Association for the Study of Epilepsy, New York City, June 7-8. Dr. A. L. Shaw, 108B The Albiston, Utica, N. Y., Secretary.

New Jersey, Medical Society of, Atlantic City, June 17-19. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.

North Carolina, Medical Society of the State of, Wrightsville Beach, June 15-17. Dr. L. B. McBrayer, Southern Pines, Secretary.

Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.

Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-First Annual Meeting, held at Atlantic City, N. J., May 4-5, 1926

Dr. Richard P. Strong, Boston, in the Chair

Heart Disease in New England

Drs. Paul D. White and T. Duckett Jones, Boston: Nearly 3,000 cases have been tabulated. A striking feature was the high incidence in persons under 20 years of age, seen in hospital practice; this is largely due to admissions for rheumatic infections. In private practice the incidence is among older persons. In consultation cases there is a high incidence of functional disorders among elderly persons. In hospital cases, rheumatic disease forms a very high incidence, 49 per cent; in the three groups together the incidence is 41 per cent. Bacterial endocarditis is equally divided among the three groups. The hypertensive and the arteriosclerotic groups constitute about 51 per cent of the total series. The coronary occlusion group seems more frequent among consultation cases, as a result of the higher age incidence of the consultant's patients, and also of more careful histories. The figures for syphilitic disease seem rather low in New England (4 per cent), as compared with those quoted for New York. The congenital rate is high in the hospital series, because many syphilitic children are referred for treatment. Cases classified as unknown form 2.5 per cent of the total series. Angina pectoris runs higher in the consultant series. The total percentage of angina pectoris in all forms of disease is 15.9. Effort syndrome constitutes 47 per cent of the functional conditions. Functional systolic murmurs are most often seen in children. Of the organic lesions, chiefly rheumatic cases, mitral lesions form 24 per cent; aortic, 2.3 per cent; mitral with aortic, 13.5 per cent, and pericarditis 2.7 per cent. Aneurysm is rare, only 0.7 per cent; flutter is also rare, 0.2 per cent of all lesions. More than one condition is often present in the same patient.

DISCUSSION

Dr. J. S. McLester, Birmingham, Ala.: I should like to point out the relative infrequency of rheumatic fever in the South. We see very few rheumatic hearts as contrasted with the figures given by Dr. White. If I could hazard a guess, the number would be nearer 10 per cent.

Dr. W. S. Thayer, Baltimore: After a study of thirty-six years in the Johns Hopkins Hospital, I do not think there is so great a difference in the frequency of occurrence of angina pectoris among hospital patients, or a change in the manner of life and of the class; but there is a great difference in the care with which patients are interrogated and the way in which the symptoms are evaluated and the diagnosis made on the way in which the patient describes his symptoms. A large number of patients cannot give an intelligent account of their symptoms, but if one interrogates them with very careful questioning so as to get a history of anginoid symptoms, one finds a surprising number of cases. That explains the increase in angina, rather than a great difference in the class of patients. Angina from the standpoint of the anatomic changes is, I fancy, not much more frequent today than it was thirty years ago. I think we have seen very much more angina in recent years in hospitals because we have looked for it. It is hard to get a colored patient to give an intelligent account, but if questioned carefully one finds he has the characteristic symptoms.

Dr. Lewis A. Conner, New York: There is one point that the speaker mentioned which deserves emphasis in the discussion. In contrasting rheumatic and syphilitic cases of aortic insufficiency, he noted that syphilitic insufficiency was slightly larger than purely rheumatic insufficiency. There is a widespread misconception as to the relative frequency of these conditions. The rheumatic type in the hospital series is under 2 per cent and the syphilitic type over 2 per cent. The rheumatic type associated with mitral disease is 15 per cent. I am convinced that in our gradually increasing emphasis on syphilitic cases of aortic insufficiency we are swinging too far. Students get the impression that the syphilitic type of aortic insufficiency is much more common in adults than the rheumatic type. I think that is entirely wrong. While rheumatic cases may be less frequent in the hospital wards, they are not such an acute condition that physicians in the wards do not see them. They are apt to be seen in the outpatient department rather than in the ward.

Dr. Joseph Pratt, Boston: My own series of case results are similar to those presented in the paper. In 312 cases of organic heart disease seen in the hospital, there were five cases of syphilitic origin. The Wassermann test was done regularly, and the aorta was examined with the fluoroscope. These figures, however, are a contrast to studies by other observers in private practice. When I was in the South I made an intensive study in Georgia and Alabama and I was impressed with the great rarity of rheumatic heart disease, especially of mitral stenosis; but there were many cases of syphilitic heart disease among negroes.

Dr. Harlow Brooks, New York: I was surprised that so few cases of syphilitic mitral stenosis were recognized, and also syphilitic angina pectoris, as this is very frequent. I think that if the figures are higher in New York it is not on account of the greater moral obliquity there, but because of the fact that we are rather apt to exchange cases and to send patients to men who are particularly interested in them, so that some cases are rather overestimated and some underestimated; that is true of cases of syphilitic heart disease if we rely solely on the Wassermann reaction, which is often misleading. I believe that the history and clinical findings are much more reliable in these cases.

Dr. T. Duckett Jones, Boston: Aortitis may occur with or without cardiac involvement. There are a number of angina pectoris cases in the syphilitic group, but they are included with other diagnoses. It was impossible in the time allotted to analyze the cases more fully, but this material will be given in the more detailed report to be published.

Relation of the Toxemias of Pregnancy to Hypertensive Cardiovascular Disease

Drs. W. W. Herrick and Jean Corwin, New York: The disease called toxemia of pregnancy includes a very miscellaneous group of symptoms, such as pernicious vomiting, visceral disturbance, toxic jaundice and severe anemia, so that a study of disturbance of a single organ would be inadequate. We have applied another type of study and have taken the antenatal period as well as a follow-up study lasting from three months to six years, making a postpartum study of some women through successive pregnancies. The subacute type with hypertension forms the largest group; these women show a blood pressure of about 180, albuminuria, edema, oliguria, perhaps mental symptoms, and often death of the fetus. Often with the delivery of the fetus the symptoms clear up. The blood chemistry often shows increase of uric acid and cholesterol. There are frequent cardiovascular changes with tortuosity of the retinal arteries, often hemorrhages and white spots in the choroid. We have followed up 165 cases of this subacute type for a prolonged period and have classified them according to their blood pressure, anything over 140 being considered hypertensive. As the blood pressure rises, the number of cases showing displaced apex is increased, and 50 per cent of hypertensive cases show retinal changes. The status of the blood pressure is important. After delivery it will often return to normal, but after a few months or years it goes back to above normal. In a summary of blood pressure readings it was shown that from 71 to 100 per cent had persistent hypertension, according to the severity of the previous blood pressure rise. These cases, which are of mild type, and frequent, merit more attention from the obstetrician because, if followed up, they later show definite organic cardiovascular changes. These women represent a class of substandard cardiovascular make-up, who react to the strain of pregnancy as do others to the wear and tear of daily life.

DISCUSSION

Dr. W. S. Thayer, Baltimore: In what proportion of these patients were you able to obtain a history of what the condition was before the onset of symptoms with undisguised eye changes?

Dr. Joseph L. Miller, Chicago: The average obstetrician does not think of later consequences. I have a series of cases in which the pressure was taken previous to pregnancy, and the hypertension was persistent over several years.

Dr. J. P. O'Hare, Boston: What was the evidence that there was not any previous kidney disease, because retinal arteriosclerosis indicates previous hypertension in 95 per cent of cases? It takes a certain length of time—at least five years—for retinal arteriosclerosis to develop.

Dr. W. W. Herrick, New York: Many of these cases have a long standing history of cardiovascular disease if followed through previous pregnancies. We can predict what will happen. The patient with cardiovascular disease reacts in this way with hypertension and albuminuria. As regards prognosis, we cannot be very definite. Thirty-seven per cent reacted with persistent hypertension, and 64 per cent showed changes of various kinds. I think pregnancy is a test of the maternal organism. Probably these patients react to the wear and tear of pregnancy as they finally will react to the wear and tear of life.

Treatment of Attacks of Syncope Occurring in Adams-Stokes Disease

Dr. Samuel A. Levine, Boston: The symptoms of Adams-Stokes disease are characterized by congestive heart failure and very slow heart rate. This may be as low as 20, which is too slow, but with a rate of 35 the patient may be able to be physically active. Patients also suffer from syncopal attacks which may end fatally. To treat these attacks is important in persons who would otherwise be fit. Some patients have attacks every hour or even as often as every ten minutes. If the patient has syncope with complete standstill of the heart, intravenous injection is useless because the drug does not circulate. What method have we for further prevention of these attacks? Barium chloride by mouth, 30 mg. four times daily, apparently has a favorable influence. It is an irritant of the vagus and thus stimulates the heart beat.

DISCUSSION

Dr. Paul D. White, Boston: One patient was relieved by barium chloride for several months. Then there was a recurrence of the attacks, and barium chloride was not effective. After that epinephrine was used with good effect

Dr. Frank N. Wilson, Ann Arbor, Mich.: During the last year three patients have died of Adams-Stokes disease at Ann Arbor. Two received epinephrine directly after death but neither patient was revived. One case was similar to that quoted by Dr. Levine. The attack lasted fifty-five seconds. The heart was made to beat by striking the precordium, and normal rhythm returned.

Dr. S. A. Levine, Boston: The routine therapy in our cases was to give epinephrine thirty minutes subcutaneously, 0.5 cc. of a 1:1,000 solution. The combination of barium chloride with epinephrine increased the irritability of the ventricle.

Effects of Hepatic Extract on Arterial Hypertension

Dr. Ralph H. Major, Kansas City, Mo.: We have made a study of various metaboloids. Guanidine produces a marked, sustained rise of blood pressure, the same as that obtained in arterial hypertension. We have studied hypertension and possibly the means of removing it by producing a substance capable of counteracting guanidine hypertension. Liver extract is very helpful. Histamine gives a different result. To show this it was necessary to procure pure liver extract free from the histamine and choline content. We tried the effect of liver extract on patients suffering from hypertension. We found that patients vary in their response, and that the same patients will vary from time to time. The results in patients confined to bed have been less satisfactory, perhaps because the dosage was too small; perhaps because there was considerable arterial injury. The best class of patient would be the young person with hypertension just beginning.

DISCUSSION

Dr. B. S. Oppenheimer, New York: We have given pure liver extract, freed from histamine and choline, in cases of essential hypertension, with a systolic pressure of 200 or over and a diastolic pressure of 100 or over. At first we had some good effects with the first lot of preparations used; lately we have had no effect. Perhaps the explanation is that the blood pressure reducing substance is unstable.

Dr. J. S. McLester, Birmingham, Ala.: We have been working on guanidine bases and have observed the effects of liver extract on a certain group of patients under 45 years, with early hypertension. Our results have been favorable. We frequently saw a drop following its use, lasting many hours, and occasionally we saw improvement with relief from the headache which did not respond to other measures. In a few instances we saw mild shock and dizziness, but we could not see any lasting effect on the blood pressure.

Dr. Lewis A. Conner, New York: In what percentage of the cases tested with liver extract were such striking results obtained as those recorded on the last chart shown? What proportion of the cases showed any results?

Dr. J. P. O'Hare, Boston: One fact stressed by Dr. Major should be emphasized, and that is that the preparation must be absolutely fresh. Another point to be noted is that Dr. Major has used very large doses by comparison with other workers. At the Peter Bent Brigham Hospital we have used smaller doses, but the results have not been entirely satisfactory. In two cases out of seventeen there was effect; in fifteen cases there was not any effect. We have never had a preparation that was absolutely good. If we could be certain of the stability, the results might be different.

Dr. H. O. Mosenthal, New York: We have had the same results as those reported by Dr. McLester and Dr. Oppenheimer, but in two out of fifteen cases treated the results have been very gratifying. One blood pressure came to the normal level from 200, and in another case the blood pressure came down and the symptoms subsided. I feel very strongly that Dr. Major has a preparation which, when properly handled, is going to relieve hypertension and relieve a disease that is extremely widespread. I think that the experimental evidence at hand shows that the preparations we have been receiving are not stable.

Dr. Ralph H. Major, Kansas City, Mo.: In regard to Dr. McLester's remarks: we have been very much impressed with the relief of headache, tinnitus, dizziness and other disagreeable symptoms. Of course, the psychic element is hard to rule out, but the results are very striking and cannot be explained entirely by the psychic effect. We started by trying to give uniform dosage, with little result; then we tried giving a dose that would reduce hypertension, and we gave 15,000 units a day as standardized against guanidine. In regard to the percentage of response, that is a difficult question to answer. There is a great deal of personal equation in the question as to whether there is response. When the patient gives a response, one does not know whether it is spontaneous or not. We have one woman whose pressure goes down following dosage, but we do not know whether this is a response to the drug, or whether she has a cycle of hypertension. Cases must be observed for a much longer time before we can make any statement as to the result.

Leukemoid Blood Pictures

Dr. E. B. Krumbhaar, St. Louis: We have made a study of blood pictures in nonleukemic cases which resemble the blood picture of leukemia cases, some cases very closely approaching the leukemia slides. In two cases there was a lymphocytosis of 75 per cent during an acute infection. In another case, a chronic carcinoma of the breast, the leukocytes numbered 120,000, with 92 per cent polymorphonuclears. Some of these cells are immature forms. The diagnosis was never in doubt, but if it had been made from the blood picture alone it would be thought to be myeloid leukemia. In a case of gas poisoning, the blood count fell and then rose, the rise being due to myelocytes. Such reactions have also been seen in cases of acute pelvic infection in women. Emphasis should be placed on the extreme length to which some of these reactions may go, and the atypical nature of them; also the difficulty of making a differential diagnosis from leukemia if the blood picture alone is taken into consideration.

Pulmonary Changes Following Artificial Hemoptysis

Drs. Charles R. Austrian and H. S. Willis, Baltimore: It is a matter of clinical observation that the roentgen-ray shadows of lungs of patients often show mottlings which later disappear. It would seem that there are two types of tuberculosis, those in which it progresses with the course of the disease, and some that go on to healing, the shadows being due to collateral inflammation or healed tubercles, or to an exudative lesion, as is seen in animals with healed tubercles when a tuberculous infection is added. In experimental animals previously infected we were not able to produce diffuse miliary tuberculosis, but the lesions were an exudation of leukocytes and serum due to sensitization on the part of the animal from previous infection. I believe that in hemoptysis in the human being, due to an existing allergy, the shadows are often due to collateral inflammation about the site of lodgment of the bacilli. In these cases there is a more favorable prognosis than is usually given.

DISCUSSION

Dr. Homer F. Swift, New York: Were the tuberculous animals injected with blood plus tubercle bacilli? I believe that in tuberculous tissues there is a substance which, when added to tuberculosis, is more irritating than the bacilli alone. In hemoptysis I think it is due to that state of affairs rather than normal blood going into the lung.

Dr. Charles S. Austrian, Baltimore: We have used blood of tuberculous rabbits with tubercle bacilli, and also blood alone and we have seen no difference in the reaction. For that reason we used normal blood with bacilli rather than blood of infected animals. Whether there is any difference in the speed of reaction I am not prepared to answer. The test rabbits were infected by bovine tuberculosis. We had two groups, normal rabbits and infected rabbits. They were injected intratracheally with suspension of tubercle bacilli in normal blood. In the first group the roentgenogram did not show as much disease as was demonstrated at necropsy.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

31: 459-602 (April) 1926

*Biliary Cirrhosis. L. G. Parsons and E. M. Hickmans, Birmingham, England.—p. 459.
*Chronic Interstitial Hepatitis. *G. F. Munns, Chicago.—p. 469.*
*Death Following Inhalation of Zinc Stearate. K. Schlaepfer, Milwaukee.—p. 474.
Defects in Membranous Bones, Diabetes Insipidus and Exophthalmos. B. S. Denzer, New York.—p. 480.
*Syphilitic Endarteritis in Children. H. M. Gilkey and C. C. Dennie, Kansas City, Mo.—p. 483.
*Erythema Infectiosum: Seventy-Four Cases. T. P. Herrick, Cleveland *Heights, Ohio.—p. 486.*
Respiratory Metabolism in Infancy and in Childhood. III. Glycogen Storage. S. Z. Levine, J. R. Wilson and H. Rivkin, New York.—p. 496.
*Uric Acid and Creatinine in Urine of Infants. O. S. Rougichitch, *Boston.—p. 504.*
Plasma Chlorides in Acute Intestinal Intoxication of Children. G. L. Boyd, Toronto.—p. 514.
*Quantitative Method for Determination of Combined Urea and Ammonia Nitrogen of Saliva. F. W. Schultz and M. R. Ziegler, Minneapolis. *—p. 520.*
*Paratyphoid Fever in Infant. D. Gingold and H. Wexler, Brooklyn.—p. 522.
Appendicitis in Children Under Five Years of Age. F. Christopher, Winnetka, Ill.—p. 525.

Biliary Cirrhosis.—A case of biliary cirrhosis is described by Parsons and Hickmans in which there was evidence of obstruction of the bile ducts, but not in their extrahepatic course. The argument is brought forward that this case supports the view that the hepatic cirrhosis occurs in at least as early a stage of this disease as the changes in the bile ducts. Metabolism balance experiments show that: fat is well split; there is an increased formation of fatty acid; fat absorption is poor; nitrogenous absorption is good; there is a negative balance for calcium, and phosphorus absorption is good; a very great proportion of the excretion of phosphorus is via the urine. The presence of large quantities of unabsorbed fat in the intestine—due to the exclusion of bile—resulted in a negative calcium balance, and a deviation of phosphorus to the urine, but had no effect on the absorption of nitrogen.

Chronic Interstitial Hepatitis.—A case of chronic interstitial hepatitis occurring in an infant, aged 11 months, the first sign of which appeared on the eighteenth day, is reported by Munns. The etiologic agent could not be determined. Possibly, there was a slow infectious process, as evidenced by exacerbations and remissions in the signs and symptoms, particularly the frequent and intermittent rises in temperature.

Death Caused by Inhaling Zinc Stearate.—Schlaepfer reports the case of a child, aged 7½ months, who died thirty-four hours after inhaling zinc stearate. Cyanosis and dyspnea characterized the clinical course of the illness, and a state of "acidosis" was noted twelve hours before death. At necropsy, the lungs were voluminous. Extensive areas of emphysema were separated from each other by small, scattered, atelectatic zones. The bronchioles contained plugs of zinc stearate and mucus, which appeared as wormlike masses. The gross picture was confirmed histologically, and the presence of extensive edema was determined. The edema involved the alveoli, especially the more atelectatic ones, and the subpleural and interlobular connective tissue septums. The lymphatics throughout the lung were conspicuously dilated. In spite of oxygen inhalation, persistence of the dyspnea may have been due to acidosis brought about by incomplete obstruction to the bronchioles with zinc stearate.

Syphilitic Endarteritis in Children.—One of the patients seen by Gilkey and Dennie was a colored girl, aged 3 years. The entire dorsum of the right foot was of a bluish hue. The three middle toes and the ends of the great toe and little toe were black. On the plantar surface of the foot there was a large black bleb, extending about 2 inches backward from the three middle toes. The second patient was a Mexican girl, aged 3 years. She had a large ulcer on the outer aspect of the right leg, extending from the external malleolus for one-third up the leg. Each patient received the same type of treatment, namely, 0.15 Gm. of neo-arsphenamine, intravenously, every week for eight weeks. Potassium iodide was given internally. Both patients recovered promptly, but the first patient lost two toes.

Erythema Infectiosum.—The evidence presented by Herrick indicates that the disease is a distinct entity, is infectious, and results in the establishment of a specific immunity. The distinguishing features of the disease are its occurrence in epidemics, the lack of constitutional symptoms, the lack of any features distinctive of the other exanthems, the long course and characteristic progression of the rash, its evanescence at all stages, and particularly the irregular but brilliant outlines seen on the arms and legs in the third stage and in the recurrences.

Uric Acid and Creatinine Excretion of Infants.—The uric acid excretion per twenty-four hours was measured by Rougichitch in a series of twenty-two male infants. The diet of the infants being purin free, the amounts of uric acid are regarded as of endogenous origin. In contrast with most of the hitherto published measurements of uric acid in infants' urine, a closely constant daily excretion was found for the individual, and a fairly constant value per unit of body weight for the group of infants, the range being from 14 to 25 mg. of uric acid per kilogram of body weight. Except in the case of an infant with active rickets, whose uric acid excretion was high (36 and 34 mg. per kilogram of body weight) no relationship of nutritional state to uric acid excretion was apparent. Uric acid excretion was also apparently independent of the age of the infant. It is suggested that the relatively high level of endogenous uric acid by infants may be explained by their high protein intake. Measurements of urine creatinine in the same group of infants support the conception of a close constancy of creatinine excretion in terms of the protoplasmic mass of the body. The range found was from 10 to 15 mg. per kilogram of body weight. The highest values were obtained in malnourished infants, probably because of their relatively larger mass of active tissue. No relationship of creatinine to differences in sleeping time or no muscular tonus was discernible. However, in the case of an infant having severe generalized convulsions, a creatinine excretion three to four times higher than normal was observed. Another infant with slight localized convulsions was found to excrete an approximately normal quanity of creatinine.

Determination of Urea and Ammonia Nitrogen of Saliva.—The method described by Schultz and Ziegler is a modification of that for the determination of blood urea described by Folin. The values obtained by its use are said to approximate those of blood-urea nitrogen more closely than do the results afforded by any other published method.

Paratyphoid in Infant.—A case of paratyphoid fever in an infant, aged 18 months, is reported by Gingold and Wexler. The salient clinical features were persistent abdominal pain of three months' duration, marked secondary anemia, a relatively brief febrile period, and isolation from the blood of *Bacillus paratyphosus* B.

American Journal of Medical Sciences, Philadelphia

171: *313-468 (March) 1926*

*Mortality and End-Results of Splenectomy. W. J. Mayo, Rochester, Minn.—p. 313.
*Confusion Between Acute Leukemia and Infectious Mononucleosis: Case of Acute Lymphoblastic Leukemia with Remission. H. P. Schenck and O. H. P. Pepper, Philadelphia.—p. 320.
Influence of Rest, Sleep and Work on Heart Action. L. Kanner, Yankton, S. D.—p. 331.
*Positive Centrifugal Venous Pulse: New Method for Its Detection. W. S. Middleton, Madison, Wis.—p. 341.
*Raynaud's Disease: Case with Extensive Bone Involvement. J. J. Monahan, Chicago.—p. 346.
*Response of Normal Human Stomach to Various Standard Foods and Summary. P. B. Hawk, M. E. Rehfuss and O. Bergeim, Philadelphia. —p. 359.

Some Reasons for Poor Results Following Gastro-Intestinal Surgery. R. S. Boles, Philadelphia.—p. 369.
Proper Classification of Cerebral Palsies of Early Life. B. Sachs, New York.—p. 376.
*Incipient General Paralysis. H. A. Bunker, Jr., New York.—p. 386.
*Alcoholic Injections into Nerve Tissues for Relief of Pain. G. I. Swetlow, New York.—p. 397.
*Function of Autogenous Kidney Transplant. K. Ibuka, Rochester, Minn. —p. 407.
*Function of Homogenous Kidney Transplant. K. Ibuka, Rochester, Minn. —p. 420.
*Renal Sepsis Associated with Manic Depressive Insanity. E. F. Kilbane, New York.—p. 433.

Mortality of Splenectomy.—Mayo says that if a patient is properly rehabilitated and on the up-grade, the result of proper methods of preparation, the mortality of splenectomy will be less than 5 per cent. The dangers of the operation are largely in delay and in an unfortunate choice of cases.

Acute Leukemia and Infectious Mononucleosis.—A case of acute leukemia is reported by Schenck and Pepper, of the lymphatic or lymphoblastic type, in which, during a remission perhaps induced by treatment, the blood picture passed through stages at which it closely resembled infectious mononucleosis and even reached the stage where it resembled the picture of agranulocytic angina. A rapid return of the leukemic blood picture, however, followed with fatal outcome.

Detection of Positive Centrifugal Venous Pulse.—It is suggested by Middleton that the simple procedure of elevating the arm may establish the presence of a positive centrifugal venous pulse in the radial vein in cases of relative tricuspid insufficiency, and that this phenomenon is not observed in normal controls or in any conditions under which the ventricular type of venous pulse has been described, other than tricuspid insufficiency.

Raynaud's Disease with Bone Involvement.—Monahan reports a case of Raynaud's disease which showed few of the classic Raynaud phenomena and in which parts of the body skeleton of the foot were sloughed out in a discharge (corresponding no doubt to the "seropurulent liquid" mentioned by Raynaud), which was found on examination to be sterile. Postoperative dissection showed a remarkable adaptation of the crippled foot to the demands made on it by change in position for weight bearing.

Response of Normal Stomach to Foods.—The result of this research by Hawk et al. shows that there is a certain characteristic response of the stomach for each variety of foodstuff. The results also serve to emphasize the ability of the normal stomach to satisfactorily handle a great variety of foods. In each particular instance, the stomach has a certain amount of work to do which in health it does in a highly characteristic manner. The digestion of meats is of great interest, and the same thing is true regarding the digestion of fresh vegetables. With the raw vegetables, however, digestion is much more of a mechanical procedure, but in each instance the test of a normal stomach is the ability of that stomach to handle these substances in characteristic fashion. In experiments it was apparent that functional diseases almost resulted in either a delay in evacuation or in a rise in the acid secretion or, again, in a failure of the stomach to react rapidly to the food in question.

Incipient General Paralysis.—A study of the earliest symptoms which may occur in patients who later develop outspoken general paralysis was made by Bunker in seventy-four cases. He found that irritability occurred as the earliest abnormality, or one of the earliest, in forty-two cases. The character change, whereby an individual is reduced in activity and spontaneity, loses some of his interests, tends to withdraw into himself, and is often described as having become "quiet," is likewise a common early symptom, for it occurred in twenty-eight cases. Loss of weight ranks as third. It occurred—and very often early—in twenty-two cases. An increased tendency to sleep was an early manifestation in fifteen cases. Speech defect, memory defect and judgment defect have considerable diagnostic value in themselves, but occurred among the earliest symptoms in only eleven, fifteen and seven cases, respectively. Visual impairment, digestive disturbance, insomnia, fatigability, headaches, tremor, and rheumatoid pains were present as the earliest manifestations in a few cases.

Alcoholic Injections into Nerves Relieve Pain.—Alcoholic injections into nerve tissues for the relief of pain has proved a valuable therapeutic procedure in Swetlow's experience. In five cases of pulmonary tuberculosis with pleuritic pain, Swetlow injected those intercostal nerves whose skin areas were hyperalgesic to pin prick. The patients have been relieved from their pain since the injection, that is, from thirty-five to 107 days. In three cases of headache the involved nerve was injected with successful results; likewise, in one case of tabes with crisis. In one case of pain in cardiac disease, paravertebral injections of alcohol gave relief. In a case of pruritus ani the introduction into the epidural space of a 20 per cent solution of alcohol in saline solution was followed by immediate and lasting relief.

Function of Autogenous Kidney Transplant.—Ibuka reports on the successful experimental transplantation of kidneys into the neck of dogs. The transplanted kidney functions for months in a practically normal manner, coexisting with the normal kidney in the abdomen; it also maintained the life of the animal in good health for a fairly long time after the excision of the other kidney, while preserving its own functional activity. One transplanted kidney was in good condition four months after the removal of the other kidney. Analysis of chemical constituents of urine from the transplant, as well as various functional tests made on it, simultaneously with the investigation of the remaining kidney in the abdomen or after the removal of this sister organ, showed a fairly normal kidney function. An apparently compensatory activity of the transplant was observed after ablation of the other kidney. The extrinsic nerve supply to the kidney and the ureter, Ibuka says, plays a minor and unessential part in their function, as the transplanted kidney functions equally well in the new location, and the renal pelvis and ureter show even an increased peristalsis. The ultimate failure of the function of these autogenous kidney transplants, which have been transplanted successfully in the neck and have functioned a fairly long while, seems to be caused by hydronephrosis and infection, mainly incurred by mechanical insult in the new location.

Function of Homogenous Kidney Transplant.—Homogenous transplantation of the kidney was performed and studied by Ibuka in fourteen pairs of dogs. The function of the homotransplants in the neck was found to continue for a few days (an average of three days) after transplantation and to end by necrosis or softening of the transplant shortly after the cessation of its function. Chemical analysis of specimens of urine and functional tests on the transplanted kidney proved that the homotransplant functioned similarly to the autotransplant for a limited time, but the function soon changed and finally ceased.

Septic Kidney and Manic Depressive Insanity.—Kilbane reports on a case of calculus pyelonephritis in a patient suffering also with a serious mental disturbance. No other gross focus of infection was apparent, and while sepsis may not be accepted generally as a cause of manic depressive psychosis, it seemed reasonable to Kilbane to suppose that the kidney condition might be in this instance an important etiologic factor.

American Journal of Obstetrics and Gynecology, St. Louis

11: 287-438 (March) 1926

*Shock in Pregnant and Puerperal Woman. H. Bailey and W. B. Driscoll, New York.—p. 287.
Lipoma of Broad Ligament: Case. R. M. Rawls, New York.—p. 305.
*Use of Vaginal Stethoscope in Early Diagnosis of Pregnancy. F. H. Falls, Iowa City.—p. 309.
Dilation of Cervix Uteri by Means of Hydrostatic Balloon. E. L. Stone, Baltimore.—p. 314.
*Obstetric Heresies at Brooklyn Hospital. W. S. Smith, Brooklyn.—p. 324.
Incompatibility of Pregnancy and Fibroids of Uterus. F. C. Mosher, Kansas City, Mo.—p. 334.
Treatment of Fibroids of Uterus. E. A. Weiss, Pittsburgh.—p. 343.
Sedimentation Test in Pelvic Diseases of Female. H. Schmitz and H. Schmitz, Chicago.—p. 353.
Danger of Malformation of Fetus in Roentgen-Ray Treatment During Pregnancy. E. Ries, Chicago.—p. 361.
Contraction and Retraction Rings. C. White, London.—p. 364.

Torsion of Normal Fallopian Tube. H. L. Darner, Rochester, N. Y.—p. 368.
*Chancre of Cervix: Two Cases. R. S. Cron, Milwaukee.—p. 378.
Cystadenoma of Ovary: Three Cases. G. A. Mayer, New Orleans.—p. 383.
Analysis of Two Hundred and Fifty Prenatal Cases. J. S. Hebert, New Orleans.—p. 387.
*Full-Term Extra-Uterine Pregnancy: Three Cases. L. A. LeDoux, New Orleans.—p. 395.
Surgery, Radium and Roentgen Rays in Treatment of Carcinoma of Cervix. H. H. Bowing, Rochester, Minn.—p. 400.

Shock in Pregnant and Puerperal Women.—Bailey and Driscoll treat shock in the following manner: In patients exhibiting preliminary symptoms of shock and exhaustion, no operative procedure should be considered until the blood pressure is 100 or above, and the operation should be conducted under gas and oxygen anesthesia, three parts to one. One should be prepared to encounter shock in the delivery of patients. After acute hemorrhage a mechanical packer should immediately be inserted into the uterus and the uterine cavity packed with iodoform gauze. Usually it is well to pack the vagina also. In the presence of actual shock, the patient should be placed with the head and shoulders lower than the rest of the body and given warm tap water by rectum, 6 ounces (180 cc.) at a time. One thousand cubic centimeters of physiologic sodium chloride solution should be injected by hypodermoclysis beneath the breasts. If the shock is complete and the blood pressure is 80 or below, 300 cc. of gum-glucose solution should be injected slowly, at the rate of 3 or 4 cc. per minute. A universal donor should be brought to the hospital, and if the blood loss has been excessive, transfusion should be done.

Use of Vaginal Stethoscope in Early Diagnosis of Pregnancy.—To promote the hearing of the fetal heart tones before the eighteenth week, Falls devised a stethoscope that could be applied over the lower uterine segment through the vagina. This was accomplished by making a long-handled stethoscope, the bell of which could be introduced into the vagina, and the earpieces attached to the rubber tubes of an ordinary Shepherd stethoscope. He has been able to diagnose pregnancy at about the fourteenth to sixteenth week in twenty patients. Another use to which the vaginal stethoscope may be put is the auscultation of the lower uterine segment in patients with placenta praevia. At or near term there is audible a uterine souffle on both sides of the midline in the lateral fornices in normal cases. However, this normal uterine souffle was decidedly increased, noticeable even in the early months, in two patients with low implanted placenta.

Manual Intra-Uterine Rotation of Fetus.—Analysis of 2,000 obstetric cases made by Smith shows that manual intra-uterine rotation of the fetus in eighty-two selected cases, whereby the position was changed from occipitoposterior to occipito-anterior through an arc of 180 degrees, does no harm to the mother and only rarely jeopardizes the child. It is of great benefit to mother and child because of the shortening of labor and because of the diminution of trauma when the labor is terminated.

Chancre of Cervix.—Cron is of the opinion that the primary lesion of syphilis occurs frequently on the cervix, and that its apparent rarity is due to the fact that it is frequently overlooked and that it rapidly involutes.

Full Term Extra-Uterine Pregnancy.—LeDoux reports three cases. One was an ovarian pregnancy with dead fetus; one was an abdominal pregnancy. The child was born alive, weighing 7½ pounds (3.4 Kg.), and when last heard from was in good condition. The mother died of general peritonitis on the sixteenth day. The third case was also an abdominal pregnancy with death of both the mother and the fetus. During twenty years, 367 patients with extra-uterine pregnancy were admitted to the Charity Hospital. All were negro women; four were primiparas and seven were multiparas.

American Journal of Pathology, Boston

2: 99-191 (March) 1926

Autotransplantation and Homoiotransplantation of Thyroid Gland in Guinea-Pig. L. Loeb, St. Louis.—p. 99.
Autotransplantation and Homoiotransplantation of Cartilage in Guinea-Pig. L. Loeb, St. Louis.—p. 111.
Secondary Gliomatosis of Leptomeninges. D. Brannan, Pittsburgh.—p. 123.
*Case of Multiple Congenital Atresia of Ileum with Complete Separation of Segment of Bowel. I. H. Erb, Toronto.—p. 137.
Adenoma of Salivary Gland. C. B. Schutz, Philadelphia.—p. 153.
Cystitis Emphysematosa: Case in Dog. W. Hueper, Chicago.—p. 159.
Effect of Chloroform on Liver of Rabbits. E. de Zalka, Boston.—p. 167.
Foreign Particles as Cause of Blood Crises and Anemia. A. R. Elvidge, Montreal.—p. 189.

Multiple Atresia of Ileum.—A case of multiple atresia of the ileum with complete separation of a segment of bowel is reported by Erb. The absence of bile pigment below the upper atresia would indicate that the occlusions had occurred before the third or fourth month of intra-uterine life. The presence of a peritoneal adhesion suggests that the cause of these atresias was an early intra-uterine peritonitis.

American Journal of Physiology, Baltimore

1: 1-234 (March) 1926

Ventricular Electrogram of Frog's Heart Obtained Through Indirect Leads. S. De Boer, Amsterdam.—p. 1.
Method for Separating Air Breathed by Right and Left Lungs: Effect of Pulmonary Circulatory Changes on This Divided Breathing. E. D. Churchill and A. Agassiz, Cambridge, Mass.—p. 6.
*Effect of Feeding Thyroid Extract on Gastric Secretion. C. Truesdell, Chicago.—p 20.
Calcium and Phosphorus Content of Strong and Weak Chicks from Hens With and Without Calcium Carbonate in Their Diet. G. D. Buckner, J. H. Martin and A. M. Peter, Lexington, Ky.—p. 28.
*Effects of Hot Baths on Respiration, Blood and Urine. III. E. M. Landis and others, Philadelphia.—p. 35.
*Regeneration of Pancreatic Tissue from Transplanted Pancreatic Duct in Dog. J. W. Shaw and E. O. Latimer, Chicago.—p. 49.
*Physiologic Action of Light. VII. Blood Calcium in Direct Irradiation of Blood. C. I. Reed and W. R. Tweedy, Chicago.—p. 54.
*Presence of Isomer of *d*-Glucose in Blood. M. B. Visscher, Minneapolis.—p. 59.
Thyroid Apparatus. XXIX. Rôle in Growth. F. S. Hammett, Philadelphia.—p. 69.
Gaseous Exchange Between Blood and Lumen of Stomach and Intestines. M. A. McIver, A. C. Redfield and E. B. Benedict, Boston.—p. 92.
Nature of Inhibition in Pennatula. A. R. Moore, Naples.—p. 112.
Permeability of Protoplasm to Ions. M. M. Brooks.—p. 116.
Tonus in Skeletal Muscles as Related to Sympathetic Nervous System. A. Kuntz and A. H. Kerper, St. Louis.—p. 121.
*Blood Counts in Vitamin A Deficiency Disease: Platelets. E. H. Falconer, Berkeley, Calif.—p. 145.
*Suprarenal Transplantation in Dog. I. Blodinger, H. E. Klebanoff and H. Laurens, New Haven, Conn.—p. 151.
Physiology of Gastric Secretion. X. Formation of Hydrochloric Acid by Gastric Mucosa. A. B. Dawson and A. C. Ivy, Chicago.—p. 158.
Heat Liberated by Beating Heart. V. C. D. Snyder, Baltimore.—p. 170.

Effect of Thyroid Extract on Gastric Secretion.—Truesdell asserts that thyroid extract caused a decrease in body weight, increase in rate of pulse, slight increase in body temperature, increased restlessness and slight diarrhea. A decrease in continuous secretion of gastric juice was observed in all cases. The gastric secretion following a meal was decreased during thyroid feeding, the rate and extent of the effect depending on the amount of the thyroid fed and the individual resistance.

Effect of Hot Baths.—The results of experimental observations are summarized by Landis et al. as follows: Hot baths cause a hyperpnea whose severity depends on the rate of rise of body temperature and also on the temperature level at which the rise takes place. Hyperpnea involves a change in both rate and depth. There is never a shadow respiration, except in the first few moments when there is strong skin stimulation and during the recovery period. The p_H change of blood to the alkaline side is apparently determined by the hyperpnea but is not proportional to it. There may take place an excretion of urine that is more alkaline than the blood, probably with varying efficiency in different individuals. Oxygen does not relieve tetany, but carbon dioxide gives definite improvement. On two occasions a change in the p_H of the blood toward the acid side was demonstrable within a few minutes of the onset of definite tetany, and the p_H change was accompanied by a fall in the carbon dioxide content of the blood. This might readily be explained if lactic acid was produced during tetany. No evidence was obtained of any definite p_H level at which tetany would occur, nor even of any critical degree of change of the p_H level.

Regeneration of Pancreatic Tissue from Transplanted Pancreatic Duct.—Shaw and Latimer aver that in completely or partially pancreatectomized dogs (the diabetes being con trolled by insulin) homografts of the pancreatic duct in the intestinal wall become vascularized and undergo varying degrees of differentiation or regeneration toward pancreas tissue. In experiments prolonged for two months or more regeneration of ductlets was always in evidence, with some indications of acini and islet formation. When the transplanted and regenerating duct does not establish connection with the lumen of the gut, secretion accumulates in the ducts. This factor probably retards the regeneration of pancreas tissue.

Effect of Light on Blood Calcium.—Reed and Tweedy show that direct irradiation of blood in vivo with a carbon arc-light does not produce any immediate change in blood calcium in dogs under ether anesthesia.

Glucose Isomer in Blood.—According to Visscher, present evidence does not support the conception that the sugar in blood is the unstable gamma glucose.

Blood Counts in Vitamin A Deficiency Disease.—Falconer is of the opinion that changes in the relative number of platelets, red cells and white cells in the blood of rats are not striking enough, or constant enough, to constitute a specific lesion of vitamin A deficiency in these animals.

Suprarenal Transplantation.—Suprarenal transplantation was performed by Blodinger et al. in fifteen dogs. Fourteen were autotransplants; one was a homotransplant. The sites of grafting were the kidney, spleen, omentum and rectus muscle. Second operations, consisting in the removal of the nontransplanted gland, were done at intervals ranging from five to eighty days after the first operation. Following the second operation, death occurred in every case with symptoms of suprarenal insufficiency. In thirteen cases death resulted in less than twenty-four hours after operation, the average being eighteen hours. The remaining two animals lived ninety-four and ninety-five hours, respectively, after the second operation, succumbing with typical symptoms. In one animal a two stage double suprarenalectomy with no transplantation was done, the dog dying eight hours following removal of the second gland. The kidney seemed to be the best site for transplantation, the graft apparently being kept alive longer there than in other sites used. The grafts in muscle were most rapidly destroyed and absorbed.

American Journal of Public Health, New York

16: 343-450 (April) 1926

Industrial Hygiene and Local Health Departments. H. L. Rockwood, Cleveland.—p. 343.
Detection of Amebae in Cases of Chronic Systemic Amebic Infection. H. Albert, Reno, Nev.—p. 352.
Public Health Aspects of Cross Connections and Dual Water Supplies. M. Nicoll, Jr., C. A. Holmquist and A. S. Bedell, Albany, N. Y.—p. 355.
Relation Between Ripe Sludge and Incoming Fresh Solids. W. Rudolfs, H. Heukelekian and P. J. A. Zeller, New Brunswick, N. J.—p. 365.
Education and Care of Undernourished Pretuberculous Children. H. DeLamater, St. Joseph, Mo.—p. 378.
Light and Health. E. R. Hayhurst, Columbus, Ohio.—p. 381.
Social Hygiene and Venereal Disease Control. C. E. Miner, St. Louis.—p. 386.
Standardization of Wassermann Test. R. Gilbert and V. Langworthy, Albany, N. Y.—p. 388.
*Prevalence of Carriers Among Recovered Typhoid Patients. C. N. Leach, S. A. Dehler and L. C. Havens, Montgomery, Ala.—p. 391.

Prevalence of Typhoid Carriers.—In the examination of 156 persons who had recovered from typhoid fever within from six months to two years, 10.3 per cent were found by Leach et al. to be typhoid carriers. These results show a percentage distinctly higher than reported by previous investigators in the United States.

Annals of Medical History, New York

8: *1-94* (March) 1926

Poetry and Physic. H. Rolleston, Cambridge, England.—p. 1.
Gleanings from Old Chinese Medicine. B. E. Read, Peking.—p. 16.
Some Humble Workers in Cause of Anatomy Hundred Years Ago. W. B. Howell, Montreal.—p. 20.
Pirate and Buccaneer Doctors. L. Eloesser, San Francisco.—p. 31.
Galen. A. Malloch, Montreal.—p. 61.
Prehistoric Surgical Bandage from Peru. R. L. Moodie, Chicago.—p. 69.
Excess Callus Following Fracture of Fore Foot in Cretaceous Dinosaur. R. L. Moodie, Chicago.—p. 73.
Spondylitis Deformans in Crocodile from Pleistocene of Cuba. R. L. Moodie, Chicago.—p. 78.

Archives of Surgery, Chicago

12: 789-948 (April) 1926

*Endothelial Myeloma, Ewing: Fifty-Four Cases. C. L. Connor, Boston.—p. 789.
*Experimental Hydronephrosis. IV. Ligation of Branch of Renal Artery. F. Hinman, San Francisco and A. B. Hepler, Seattle, Wash.—p. 830.
*Angio-Endothelioma of Bone. A. Kolodny, Iowa City.—p. 854.
*Bone Formation in Osteogenic Sarcoma. E. H. Eising, New York.—p. 867.
*Interstitial Growth in Growing Long Bones. S. L. Haas, San Francisco.—p. 887.
*Strangulated Hernia from Standpoint of Viability of Intestinal Contents. A. J. Beller and R. Colp, New York.—p. 901.
*Can Pleural Effusions Following Thoracotomies Be Prevented by Artificial Pneumothorax? E. Carlson and S. Bunnell, San Francisco.—p. 919.
Review of Urologic Surgery. A. J. Scholl and others, Los Angeles.—p. 928.

Endothelial Myeloma.—The fifty-four cases analyzed by Connor are considered important enough clinically and pathologically to report in full. The belief that these form an entity separable from osteogenic sarcoma is borne out by these characteristics: their almost constant location in the shafts of the long bones and in flat bones in which osteogenic sarcoma seldom occurs; their peculiar morphology, the type cell being easily distinguished from the osteoblast in most cases, and their susceptibility to radium and roentgen-ray treatment. The cells do not form an intercellular substance that will stain with the dyes used to differentiate collagen, bone and cartilage. At the same time, the cells are separable from those arising from the primitive hemocytoblast, and are considered, therefore, to be different from other various forms of myeloma which presumably arise from that cell. They resemble other myelomas by their predilection to metastasize to other bones. They occur in children mainly, and many of them are preceded by trauma and by signs of inflammation, apparently resulting from the trauma, this inflammatory reaction passing so imperceptibly into malignant disease that the two seem inextricably associated in the early stage. Histologically, they may be divided into angiomatous, reticular and diffuse tumors. Several important characteristics almost constantly associated with the tumor are the slow development with intermittent pain, swelling that may recede only to return and to become progressive, and the distressingly frequent confusion with chronic osteomyelitis clinically, roentgenologically and even, occasionally, histologically. As a final distinguishing point, the therapeutic radium or roentgen-ray test is advocated, this tumor, in contrast to osteogenic sarcoma, usually melting under the influence of these forces. Contrary to the opinion of Ewing and others, it is thought that endothelial myeloma arises as a solitary tumor, the multiple tumors appearing as actual metastases, and for this reason it is believed that amputation in the early stage is a form of treatment to be considered, though apparently radium has cured several cases. The prognosis, with a combination of surgery and irradiation, is not always death. Patients have lived for five years or longer, one sixteen years, after amputation, and many who have been treated by a combination of surgery, radium, roentgen-ray and sometimes Coley's toxins, are living over three years after the onset of the disease. The prognosis seems distinctly better than that of osteogenic sarcoma and other myelomas, and for this reason it is urged that these be considered special cases, in which, by energetic measures, a permanent cure may be possible.

Experimental Hydronephrosis.—This is the fourth paper in the series of reports made by Hinman and Hepler. The particular problem studied was the result of simultaneous ligation of the posterior branch of the renal artery and the ureter on the same side. The findings were: Because of the almost complete absence of arterial anastomosis, either intrarenal or extrarenal, ligation of the posterior branch of the renal artery causes infarction and throws out of function from one third to one half of the kidney. When this procedure is combined with total ureteral obstruction on the same side, there are produced in a remarkably short time enormous sacculations or diverticula of the infarcted area.

The effect is due to the lessened resistance of the degenerated parenchyma to urinary back pressure, and emphasizes, in an exaggerated manner, the significance of blood supply to hydronephrotic dilation. The absence of hydronephrosis in two specimens of this series, both of which showed a focal suppurative nephritis, confirms the belief in the importance of early infection with its resulting anuria in the production of primary atrophy when the ureter is completely obstructed.

Angio-Endothelioma of Bone.—Two cases are analyzed by Kolodny to show that angio-endothelioma of bone is a true pathologic entity, although it is exceedingly rare. He insists that, unless the diagnosis of endothelioma of bone is arrived at only after all the evidence is clear and conclusive, endotheliomas will continue to be the graveyard of those uncommon complex tumors of which the present day knowledge is extremely meager. Not by dodging and side-stepping the question of recognition of angio-endothelioma of the bone as an existing disease but by careful and intensive study of similar tumors and by elimination of all those which are of questionable origin will this be accomplished.

Bone Formation in Osteogenic Sarcoma.—The following hypothesis is put forward by Eising: Sarcoma in bone is a malignancy of the softer structures and connective tissues in bone, progressing in the matrix and along the pathway of the haversian canals and blood vessels. The new bone proliferation in osteogenic sarcoma is a secondary process and is the result of an attempt at the establishment of a natural barrier to the intrusion of the neoplastic process.

Interstitial Growth in Long Bones. — Haas asserts that interstitial proliferation of osseous tissue plays no part in the elongation of a growing bone, either in the mature bone or the young osteoid tissue on the epiphyseal cartilage plate. Length growth of bone is entirely dependent on the purposeful multiplication of the cartilage cells of the epiphyseal cartilage plate.

Strangulated Hernia and Viability of Intestine. — In two cases of strangulated hernia coming to operation, the contents of the sac were thought viable and were therefore replaced within the abdomen. Subsequent necropsies revealed gangrene of these intestinal loops with a plastic peritonitis. In order to determine the frequency of this untoward complication, Beller and Colp made a statistical review of 278 cases of strangulated hernia occurring among 4,139 cases of abdominal hernia, an incidence of 6.7 per cent. Apparently, the ability of nature to resurrect the viability of the average injured intestine has been exaggerated. In this series there were sixty-nine cases in which the compromised intestine had passed beyond the stage of congestion. Twenty-two of these were definitely gangrenous, and resection was performed. In forty-seven, after due deliberation, the contents were thought viable and were therefore reduced. Fourteen, or 30 per cent, of these patients subsequently died, the clinical picture many times resembling either intestinal obstruction, peritonitis or both. The authors assert that when viability of the intestine is questionable, resection need not be performed as a matter of routine because the involved bowel, adequately protected, may be left exposed in the wound for from six to eight hours before its fate is decided.

Does Artificial Pneumothorax Prevent Formation of Pleural Effusions?—From their experiments Carlson and Bunnell conclude that not enough pressure can be used in artificial pneumothorax either to prevent or to lessen the formation of pleural effusion, which so frequently jeopardizes results following thoracotomy. The old procedure of producing adhesions between the visceral and parietal pleura, which was long ago advocated by Sauerbruch and others, gives the better results. Aspiration of all the air following tight closure of the chest wall and early and repeated aspiration of any fluid formed is therefore indicated. The fixation of the visceral pleura to the thoracic wall by catgut sutures might assist in this process. Pneumothorax encourages the increase and spread of pleural infection. The danger from excess of pneumothorax in healthy normal persons with normal mediastinums is by no means a matter of minor importance.

Colorado Medicine, Denver

23: 109-146 (April) 1926

*Importance of Thyroid in Relation to Certain Varieties of Heart Disease. J. R. Arneill, Denver.—p. 111.
*Pathology of Case of Chronic Epidemic Encephalitis with Myoclonia. W. M. Greig, Denver.—p. 116.
*Method of Producing "Defatted" (Non-Acid Proof) Living Cultures of B. Tuberculosis. R. C. Whitman and K. L. Chambers, Boulder.—p. 118.
Colorado as Research Center in Tuberculosis. H. J. Corper, Denver.—p. 125.
Postmortem Examination: Index of Professional Efficiency. R. G. Mills, Denver.—p. 133.
Early Examination of Water Supply in Colorado. W. C. Mitchell, Denver.—p. 137.
Psychopathology: Sleep. L. H. Ziegler, Denver.—p. 141.

Thyroid Tumors and Heart Disease.—Experience has convinced Arneill that great numbers of toxic adenomas go unrecognized and that as a result many patients die a cardiovascular death unnecessarily. Early recognition and operation would have cured these patients. Every examination of a patient should include a careful inspection and palpation of the neck. Whenever possible, this should be supplemented by a fluoroscopic examination of the chest in order to determine the presence or absence of substernal or intrathoracic goiter. If this plan is followed as a routine, innumerable cases of thyroid disease will be detected which would otherwise go unrecognized. In addition to these examinations, basal metabolic rates should be determined whenever possible.

Pathology of Chronic Encephalitis.—The pathologic findings in a fatal case of chronic epidemic encephalitis are given by Greig. The disease was myoclonic in type, with twitching, marked clonic movements, and a few generalized convulsions, epileptiform in nature. The disease terminated after a course of about nine months with symptoms of a marked myelitis. Although the case was chronic in type, the microscopic examination disclosed little thickening of the vessel walls as an indication of past perivascular infiltration. The changes found compare with those generally found. In addition, a number of less common changes were noted. Beginning in about the middle of the thoracic cord there was seen an increase in the lipochrome element of the nerve cells, and with gradually ascending levels this increase became more marked until in the nuclei opposite the fourth ventricle the change assumed the character of collections of golden brown pigment granules. Some of the cells were filled almost to engorgement, while others had only a few scattered granules. In some cells the granules seemed to be collected in the form of a shell about a central hyaline mass with the cell nucleus pushed to one side. Not all of the nuclei were involved. A group of affected cells would be surrounded by unaffected groups. This change was found up to the lenticular nucleus, in which there was a gradual shading off to the normal amount of the lipochrome element. In the cord throughout the posterior columns and the posterior portion of the lateral columns, beginning in the upper midthoracic region, and culminating in number and size in the lower cervical region, were found a large number of small, round, almost black homogeneous bodies, somewhat resembling corpora amylacea. The evidences of myelitis were noted as low as the midthoracic region.

Tubercle Vaccine Made from Wax-Free Cultures.—On agar medium made from bone instead of meat infusion, the tubercle bacillus grows wax free (i. e., nonacid proof) in the first generation. Whitman and Chambers found that vaccines prepared by the customary method from such wax-free cultures of an old, greatly attenuated strain of human type bacillus afford practically complete protection to guinea-pigs against subsequent injection of overwhelming doses of virulent bovine bacilli. This protection lasts for about one year, and no doubt for a longer time, though in somewhat lower titer. The same vaccine seems to have considerable curative value in established tuberculosis.

Florida Medical Association Journal, Jacksonville

12: 250-283 (April) 1926

Gastric Syphilis. J. K. Simpson, Jacksonville.—p. 250.
Congenital Bilateral Anophthalmos and Polydactylism: Case. C. J. Heinberg, Pensacola.—p. 253.
Management of Epilepsy. W. S. Walsh, Gainesville.—p. 256.
Jaundice: Case. E. Jelks, Jacksonville.—p. 262.

Georgia Medical Association Journal, Atlanta

15: 125 172 (April) 1926

*Hexylresorcinol in Bacillus Proteus Pyelitis: Case. W. E McCurry, Hartwell —p 125
Treatment of Pyelitis W. R Holmes, Atlanta —p 128
Surgery of Inguinal Hernia W F. Westmoreland, Atlanta —p. 132.
Local Anesthesia. Report of One Hundred and Ninety Cases G. Y. Massenburg, Macon —p 136
History Taking by General Practitioner W. H Clark, LaGrange —p 140
Syphilis and General Practitioner H Levington, Savannah —p 143.
Surgery of Colon W E Sistrunk, Rochester, Minn —p 147
New and Rapid Method of Blood Transfusion W A Norton, Savannah. —p 155

Hexylresorcinol in Proteus Pyelitis.—A patient with pyelitis due to *Bacillus proteus* was treated persistently by McCurry over a period of three and a half months by the methods in ordinary use, including bladder instillations, pelvic lavage, methenamine, alkalization and methylene blue, with only partial temporary relief After four days of treatment by hexylresorcinol, the urine was sterile Hexylresorcinol was continued for a total of twelve days, and the urine has remained sterile

Journal of Bacteriology, Baltimore

11: 153 228 (March) 1926

Magnitude of Error Due to Ammonia and Its Salts in Van Slyke Amino Nitrogen Procedure as Commonly Applied in Studies of Bacterial Metabolism L B Parsons and W S Sturges, Omaha —p 165
Possibilities of Conductivity Method as Applied as Studies of Bacterial Metabolism L B Parsons and W S Sturges, Omaha —p 177.
Isolation of Clostridium Flabelliferum Nitrogen Metabolism of Several Strains of C Flabelliferum and C Sporogenes W S Sturges and L B Pasons, Omaha —p 189
Studies in Microbic Heredity V Biogenetic Law of Haeckel and Origin of Heterogeneity Within Pure Lines of Bacteria. R R. Mellon, New York —p 203.

Journal of Experimental Medicine, Baltimore

43: 289 440 (March) 1926

*Type of Phagocytic Cell Relative Proportions in Human Bone Marrow and Spleen as Identified by Supravital Technic, Pernicious Anemia. C A Dean, Boston —p 289
Effect of Thyroidectomy and Thymectomy in Experimental Syphilis of Rabbit L Pearce and C M Van Allen, New York —p. 297.
Variations in Carbon Dioxide Requirements Among Bovine Strains of Bacillus Abortus T Smith, Princeton, N J —p 317
Effect of Vaccination Against Bovine Infectious Abortion T. Smith and R B Little, Princeton, N J —p 327
Rapid Method for Isolation of Bacillus Abortus from Uterine Exudate and Diseased Placenta J B Nelson, Princeton, N J —p 331
*Relation Between Tumor Susceptibility and Heredity III Spontaneous Tumors of Lung in Mice C J Lynch, New York —p 339
Effects of Insulin on Weight of Rabbits' Suprarenal Glands H S. Thatcher, Cleveland —p 357
*Immunity Produced by Growth of Tetanus Bacilli in Digestive Tract C Tenbroeck and J H Bauer, Peking, China —p 361.
*Biology of Streptococcus V Antigenic Relationships Between Strains of Streptococcus from Scarlet Fever and Erysipelas F. A. Stevens and A R Dochez, New York —p 379
*Compensatory Hypertrophy of Suprarenal Cortex E M MacKay and L L MacKay, San Francisco —p 395
*Histogenesis of Autoplastic Thymus Transplantations J. M Gottesman and H L Jaffe, New York —p 403
*Common Cold I. Normal Bacterial Flora of Nose and Throat with Variations Occurring During Colds G S Shibley, F M Hanger and A R Dochez, New York —p 415
Frequency of Spontaneous Tumors in Domestic Fowl M Schneider, Storrs —p 433

Phagocytic Cell in Bone Marrow in Pernicious Anemia.—The purpose of Doan's study was to determine the type of phagocytic cell that is found in increased numbers in the bone marrow in pernicious anemia In general, there is a reversal of the normal in the ratio of clasmatocytes in the spleen to clasmatocytes in the bone marrow in pernicious anemia, with a marked tendency toward the phagocytosis of young, immature, nucleated red blood cells in the bone marrow. The peripheral blood picture suggests that these cells had never been in circulation Doan's observations do not indicate that the spleen takes any directly active part in an increased destruction of blood in pernicious anemia.

Tumor Susceptibility and Heredity.—The facts presented by Lynch indicate that susceptibility to the development of tumors in the lung is an inherited character.

Immunity to Tetanus.—Additional data are presented by Tenbroeck and Bauer on the fact that carriers of tetanus spores are relatively immune to tetanus. They found that this immunity is specific for the serologic type of tetanus bacilli fed or injected, and that the antitoxin content of the serum does not indicate the degree of resistance to infection. As there is no relation between the amount of antitoxin in the blood and immunity to tetanus, the authors believe that other bodies, specific or type, must occur and make for the immunity observed.

Biology of Streptococcus.—Stevens and Dochez assert that erysipelas strains form a closely related group of hemolytic streptococci. Scarlatinal strains form an equally compact group The two groups are related to pyogenic strains, but less closely than the strains within the groups. These groups are related to pyogenic strains, but less closely than they are related to each other.

Compensatory Hypertrophy of Suprarenal Cortex.—The MacKays were able to determine that removal of one suprarenal is followed by hypertrophy of the remaining gland. The increase in size of the whole gland is due entirely to hypertrophy of the cortex and amounted to approximately 91 per cent and was due in large part, if not entirely, to an increase in the size of the cells. No increase in the size of the medulla or its cells was found.

Autoplastic Thymus Transplantations.—Gottesman and Jaffe found that thymus gland of young rats autotransplants easily when inserted into the muscles of the abdominal wall. The regeneration is usually complete by the fourteenth day, when the new formed thymic lobules show differentiation into cortical and medullary zones.

Bacteriology of Common Cold.—The normal bacterial flora of the nose and throat of thirteen individuals has been studied by Shibley, Hanger and Dochez over periods ranging from five to nine months. No bacteria were found in early cold cultures to which a causative rôle could be assigned. In the course of colds, the basic flora of the nose was often scanty in the early stages. The throat showed reduction of prominence or alterations in predominance of the basic flora. Certain organisms were prominent in colds, usually as late or secondary invaders; these included *Staphylococcus aureus*, hemolytic streptococci, and *B. influenzae*. There was a striking increase in the incidence of hemolytic streptococci in throat infections.

Journal of Infectious Diseases, Chicago

38: 281 380 (April) 1926

Purification of Cultures of Spirochaeta Pallida by Chemical Methods. D Wilkes Weiss and C Weiss, Philadelphia —p 281
*Wassermann Reaction in Syphilis of Rabbits R. D. Herrold, Chicago. —p 290
Modified Methyl Orange Indicator A J Salle, Berkeley, Calif.—p 293
*Human Intestinal Carriers of Tetanus Spores in California J. H Bauer, Peking, and K F Meyer, San Francisco —p 295
Changes in Bacterial Content of Stored Normal and Typhoid Feces E O. Jordan, Chicago —p 306
Influence of Size of Inoculum on Incubation Period and Course of Rabbit Syphilis G E Wakerlin, Madison, Wis —p 323
Wassermann Reaction in Rabbit Syphilis G E Wakerlin and P. H. Carroll, Madison, Wis —p 327.
*Doderlein's Vaginal Bacillus A. F. Lash, Urbana, and B Kaplan, Chicago —p 333
Anthrax Immunity: Attenuation of Bacillus Anthracis by Means of Sodium Chloride and Other Chemicals S J. Schilling, Fayetteville, Ark —p 341.
Soluble Toxic Products of Enteritidisparatyphoid B Group Their Action Especially in Relation to Blood Sugar. M. L. Menten, Pittsburgh. —p 354
*Organism of Actionomyces Like Tonsillar Granules R. Tunnicliff, Chicago —p 366
Intracellular Proteins of Bacteria: Globulins C. I. Nelson, Chicago —p 371
Are There Immunologic Strains of Spirochaeta Pallida? J. A Kolmer, D Wilkes Weiss and C E Richter, Philadelphia —p 378

Wassermann Reaction in Experimental Syphilis.—Observations made by Herrold of the Wassermann reactions in experimental syphilis of rabbits indicate that the serologic response is not identical in every instance. There is also a vacillation in the reaction to some extent. "These results in rabbits suggest that if repeated Wassermann tests were made in cases of suspected latent syphilis, many patients might be found to be syphilitic whose syphilis is now overlooked.

Human Intestinal Carriers of Tetanus Spores.—Four hundred and eighty-seven specimens of human feces from California have been examined by Bauer and Meyer and 24.6 per cent were found positive for tetanus spores. Of the 120 tetanus bacilli isolated from these specimens, 63.3 per cent were type 1; 7.5 per cent, type 2; 17.5 per cent, type 3; 2.5 per cent, type 4, and 5 per cent, type 5. Type 6 had not been found. In addition to these, three strains of tetanus bacilli have been found which were not agglutinated with any of six type serums tested. Type 7 serum was not available; therefore it was not determined whether these strains are type 7 or belong to a new serologic group heretofore not described.

Döderlein's Vaginal Bacillus.—The vaginal flora of ninety-eight pregnant women was examined by Lash and Kaplan by means of smears and cultures. Döderlein's bacillus occurred in forty-one instances, while isolated in only thirteen instances. Failure to cultivate in a greater number of cases was probably due to more rapid growth of the associated organisms. The morphology, cultural characteristics, biochemical, pathogenic properties and immunologic reactions of four strains were studied; three could be classified under the general group of lactobacillus, while one resembled a diphtheroid. Serologically, they are distinct, but there may be some relationship. The name *Lactobacillus vaginae* is proposed as a provisional name for the Döderlein strain B.

Organism of Actinomyces-Like Tonsillar Granules.—From an actinomyces-like tonsillar granule, a weakly gram-positive flexible motile anaerobic organism has been isolated by Tunnicliff that produces in pure culture rosettes and test tube brush-like forms similar to those seen in the original material.

Military Surgeon, Washington, D. C.

58: 225-336 (March) 1926

Surgical Impressions of World War. J. A. Blake.—p. 225.
Sewage Disposal Problems of Chicago. R. W. Putnam.—p. 243.
Standardization of Splints in A. E. F. IV. N. Allison.—p. 259.

58: 337-448 (April) 1926

Medical Service of Norwegian Army. H. Daae.—p. 337.
Sketches of Medical Service in France. B. K. Ashford.—p. 342.
Medical Esprit de Corps. A. W. *Dunbar.—p. 364.*
Venereal Disease Problem with American Forces in Germany. M. A. Reasoner.—p. 370.
*Fracture of Rami of Pubic Bones. L. L. Gardner.—p. 392.
Time Saving Procedures in Clinical Laboratory Technic. J. D. Reichard.—p. 396.
Physical Examination of Candidates for Admission to U. S. Military Academy. G. C. Dunham.—p. 399.
Duties of Station Surgeon. G. M. *Ekwurzel.—p. 407.*

Fracture of Rami of Pubic Bones.—As the result of being crushed between two coal cars, Gardner's patient sustained a fracture of the rami of both pubic bones and some insignificant skin abrasions; nevertheless, he died from a gas bacillus (Welch) infection six days later. The man had been healthy previously, and the postmortem did not disclose any rupture of any part of the intestine, although the sigmoid and rectum were stained with subperitoneal hemorrhage. All other organs were unaffected. Evidently the gas bacillus infection was autogenous, gaining access to the pelvic tissue from the intestine, and thence entering the blood stream as a terminal event.

Michigan State Medical Society Journal, Grand Rapids

25: 171-204 (April) 1926

Tuberculosis of Kidney. H. H. Young, Baltimore.—p. *171.*
Function of Cerebral Hemispheres. I. M. Altshuler, Detroit.—p. 176.
Breast Tumors. H. W. Hewitt, Detroit.—p. 179.
Parinaud's Conjunctivitis. A. Dean, Grand *Rapids.—p. 183.*
Intumescent Rhinitis and Sinusitis. M. N. Frank, *Detroit.*—p. 185.
Focal Infection in Teeth Causing Transverse Myelitis. R. L. Glass, *Ann Arbor.—p. 187.*

New Orleans Medical and Surgical Journal

78: 651-715 (April) 1926

*Tonsillomycoses. A. Castellani, New Orleans.—p. *651.*
Three Cases of Gas Bacillus Infection. A. A. Herold, Shreveport.—p. 661.
Diagnosis of Diseases of Pancreas. J. H. Musser, New Orleans.—p. 663.
Diagnosis and Treatment of Maxillary Sinusitis. *H.* W. Qualls, Memphis, Tenn.—p. 667.
Color Acuity: Importance in *Diagnosis.* M. E. Brown, New Orleans.—p. 671.
Mercurochrome in Surgery. S. W. Johnston, Vicksburg, Miss.—p. 676.
Evidences of Hypophyseal Dysfunction. I. I. Lemann, New Orleans.—p. 678.
Cutaneous Reactions as Aid to Diagnosis. A. W. Pigott, Oxford, Miss.—p. 682.
Choice of Anesthetic. L. S. Brown, Water Valley, Miss.—p. 691.
Insulin and Diabetes Mellitus. H. L. Rush, Meridian, Miss.—p. 693.
Significance of Early Diagnosis of Diverticulum of Esophagus. A. L. Levin, New Orleans.—p. 696.

Tonsillomycoses.—Castellani reports four cases of tonsillomoniliasis; two cases of tonsillo-oidiosis; one case of tonsillowilliasis, and three cases of tonsillohemisforosis. He asserts that affections of the tonsils due to fungi higher than bacteria (mycetes) are not very rare. He has seen cases in tropical and subtropical countries and also in Europe and in England. They may be clinically separated into two groups: chronic tonsillomycoses and acute tonsillomycoses. Acute tonsillomycoses may at times clinically simulate diphtheria, Plaut-Vincent's angina and follicular tonsillitis. The treatment consists in local applications of glycerin of borax, and, most efficacious, a phenol or a chlorine spray.

Northwest Medicine, Seattle

25: 167-220 (April) 1926

**Cholecystitis. E. S. Judd, Rochester, Minn.—p. 167.*
Pathology and Diagnosis of Cholecystitis. A. A. Matthews, Spokane.—p 171.
Diagnosis of Cholecystitis and Cholelithiasis. D. J. Lawson, Portland, Ore.—p. 178.
Gallbladder: Sodium Tetraiodophenolphthalein Test. W. J. Stater, Portland, Ore.—p. 183.
Factors of Safety in Gallbladder and Duct Surgery. P. Rockey, Portland, Ore —p. 187.
*Cholecystitis and Diabetes. L. Ricen, Portland, Ore.—p. 191.
Surgery in Presence of Diabetes Mellitus. L. J. Palmer, Seattle.—p. 196.
Control of Scarlet Fever. G. F. Dick and G. H. Dick, Chicago.—p. 200.
*Production of Cerebral and Visceral Hemorrhage in Young Rat. I. A. Manville, J. L. Brodie and C. U. Moore, Portland, Ore.—p. 205.
Dermoid Tumor of Corneoconjunctiva: Case. A. B. Dykman, Portland, *Ore.—p. 206.*

Cholecystitis.—A study of 400 cases has convinced Judd that if a patient had a typical history of cholecystic disease, with characteristic colicky pain, he would be relieved of his symptoms if the gallbladder were removed, whether or not it showed recognizable disease. This study furthermore seemed to indicate that in cases of cholecystitis grade 1, in which the clinical manifestations were definite but disease unrecognizable at operation, cholecystectomy was followed by cure in a higher percentage than in the cases in which the disease of the gallbladder was graded 2, 3 or 4. The study furthermore showed that, if the patient's symptoms were of the chronic dyspeptic type or if the predominant features were soreness, tenderness, and aching in the side, the likelihood of cholecystectomy promoting cure was not great.

Cholecystitis and Diabetes.—Ricen has succeeded in demonstrating experimentally that lesions of the islands of Langerhans, resulting in diabetic symptoms, can be produced by hematogenous infections with *Streptococcus hemolyticus* and *B. typhosus,* if carried on for a sufficiently long period. He has never succeeded in lowering the sugar tolerance in animals with their gallbladders removed, which he thinks points to the importance of the infected gallbladder in injuring the pancreas, and particularly the islands of Langerhans, to such an extent as to produce diabetic symptoms. It is interesting to note that, whenever the injections produced febrile reaction, the micro-organisms injected were found in the gallbladder.

Experimental Visceral Hemorrhages.—Manville and his associates were able to produce experimentally in rats a hemorrhagic condition which seems to be analogous in many respects to that found in infants showing the hemorrhagic diathesis.

Public Health Journal, Toronto

17: 151-198 (April) 1926

Developments of Scarlet Fever Research. D. M. Fraser.—p. 151.
Results of Active Immunization Using Diphtheria Toxoid. A. M. Jeffrey.—p. 155.
Dick Test. L. M. Murray.—p. 157.
Whole Convalescent Blood and Antitoxin in Treatment of Scarlet Fever. B. Hannah.—p. 165.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Anesthesia, Manchester

3: 165-212 (April) 1926

*Status of Ethylene as Anesthetic. C. L. Hewer.—p. 174.
Eliminating Static from Operating Rooms to Avoid Accidents with Anesthetics. E. K. McKesson.—p. 178.

Status of Ethylene as Anesthetic.—Hewer is of the opinion that ethylene must be given a definite place in anesthesia, and, in his opinion, it possesses advantages in certain cases which are not to be obtained by the employment of any other drug. The chief value of ethylene-oxygen anesthesia is for operations of medium severity lasting for a considerable time. In an average case, it permits of (*a*) a rapid and pleasant induction; (*b*) moderate relaxation without cyanosis, and (*c*) a quick recovery, with few, if any, after-effects. For short minor proceedings, ethylene offers no advantages over nitrous oxide and, indeed, is more likely to give rise to nausea or vomiting. At the other end of the scale, for extensive laparotomies, etc., in which absolute muscular relaxation and minimal respiratory movements are essential, ethylene cannot compare with the endotracheal nitrous oxide-oxygen-ether technic. A further use of ethylene-oxygen anesthesia is as an adjuvant to regional analgesia; e. g., in cases of gastrectomy performed under paravertebral or splanchnic block. It is undoubtedly preferable to pure nitrous oxide-oxygen in these combined methods, as respiration will be shallow and all cyanosis avoided without the disadvantage of any added ether.

British Journal of Dermatology and Syphilis, London

38: 143-184 (April) 1926

Lichen Nitidus. H. W. Barber.—p. 143.
Etiology and Treatment of Infantile Eczema. A. M. H. Gray.—p. 157.

British Medical Journal, London

1: 683-728 (April 17) 1926

*Etiology of Accidental Hemorrhage and Placental Infarction. F. J. Browne.—p. 683.
Theory and Practice in Relation to Treatment of Cancer with Lead. W. B. Bell.—p. 687.
Posture as Factor in Health and Disease. M. F. Forrester-Brown.—p. 690.
Symmetrical Urea Compounds as Chemotherapeutic Agents. J. E. R. McDonagh.—p. 693.
*Acute Suffocative Pulmonary Edema. A. Merrin, F. S. Coleman, F. B. Julian and C. L. Spackman.—p. 696.
Dislocation of Acromioclavicular Joint. J. Riddel.—p. 697.
Relationship of Herpes Zoster and Chickenpox: Two Cases. C. R. Wilson and J. H. Mitchener-Little.—p. 697.

Etiology of Accidental Hemorrhage and Placental Infarction.—The experiments reported on by Browne show that nephritis, acute or chronic, is an important predisposing factor in the production of accidental hemorrhage and placental infarction, and that toxemia is the exciting cause. It is believed that organisms only act by setting up an acute exacerbation of the nephritis, and that they do not lead directly to the hemorrhage, the latter being caused by endogenous poisons held up in the circulation by the acutely injured kidney.

Acute Suffocative Pulmonary Edema.—Merrin et al. report three cases of acute suffocative pulmonary edema in which treatment was with morphine. All three patients had no history of a previous attack, and all had valvular disease of the heart. Coleman has seen five cases that show that acute suffocative pulmonary edema occurs in a variety of chronic diseases—chronic regurgitation, asthma, and mediastinal neoplasm. Julian reports a case in which antimony tartrate acted very satisfactorily. In Spackman's case, bleeding gave speedy relief.

Irish Journal of Medical Science, Dublin

6: 153-200 (April) 1926

Protein Sensitization and Kindred Phenomena. E. T. Freeman.—p. 157.
Paroxysmal Tachycardia: Two Cases. L. Abrahamson.—p. 170.
Hyperemesis in Early Months of Pregnancy; Death Three Weeks After Termination of Pregnancy. G. Fitzgibbon.—p. 175.
Case of Double Vestibulotomy. H. Law and G. Bewley.—p. 181.

Journal of Obstetrics and Gynaecology of British Empire, Manchester

1: 1-182 (Spring) 1926

Rupture of Uterus During Pregnancy. J. Riddel.—p. 1.
Diet in Treatment of Preeclampsia. V. J. Harding and H. B. Van Wyck.—p. 17.
Gynecologic and Obstetric Clinic. W. B. Bell.—p. 33.
Imperforate Hymen. A. M. Fleming.—p. 46.
Endoscopy of Uterus: Hysteroscope. H. F. Seymour.—p. 52.
Tuberculosis of Fallopian Tubes. E. Maclean.—p. 56.
*Hyperemesis of Pregnancy. A. M. Drennan and C. S. Hicks.—p. 61.
Hyperemesis in Early Months of Pregnancy, Death Three Weeks After Termination of Pregnancy. G. FitzGibbon.—p. 70.
Puerperal Inversion of Uterus: Replacement by New Form of Aveling Repositor. W. W. King.—p. 76.
Cesarean Section for Labor Complicated with Prolapse of Cord. J. A. Kynock.—p. 79.
Intraperitoneal Hemorrhage and Intestinal Obstruction in Puerperium From (?) Separation of Old Adhesion to Uterus. R. W. Johnstone.—p. 81.
Case of Chorionepithelioma with Adenomyoma. A. A. Gammell.—p. 83.

Changes in Vomiting of Pregnancy.—A study made by Drennan and Hicks of four cases of pernicious vomiting of pregnancy shows the importance of estimating the percentage of ammonia nitrogen excretion in the urine, and the necessity for repeated examinations of this "ammonia coefficient." In the toxic form, the ammonia excretion remains high, but may show marked fluctuations, even in spite of clinical improvement. The percentage of ammonia excretion—above the normal—gives little indication of the gravity of the case. One of the cases studied terminated in death, and a necropsy was performed. The injury, in the toxic cases, affects the liver particularly, but the kidney may also suffer. The nature of the liver injury is a toxic necrosis affecting especially the central area of the lobule. The cause of the injury appears to be derived from the fetal products, as removal of these leads to recovery and a return to normal of the ammonia excretion. There may, however, be prolonged after-effects of toxemia. Too long a delay in removing the products of conception may lead to irreparable damage. The neurotic type of case shows no increase in ammonia excretion, or only a transient rise, which may be due to other factors than toxic injury to the liver.

Journal of Physiology, London

61: 1-150 (March 18) 1926

Effect of Stimulation of Vagi on Pyloric Region of Stomach. E. D. McCrea and B. A. McSwiney.—p. 28.
*Influence of Exercise on Inorganic Phosphates of Blood and Urine. R. E. Havard and G. A. Reay.—p. 35.
Impulses Produced by Sensory Nerve Endings. I. E. D. Adrian.—p. 49.
Elasticity of Skeletal Muscles. J. Lindhard and J. P. Möller.—p. 73.
Interpretation of Electromyogram of Striated Muscle During Contractions Set Up by Central Nervous Excitation. J. G. Dusser de Barenne and J. F. G. Brevée.—p. 81.
*Factors Concerned in Production of Pulmonary Edema. R. K. Lambert and H. Gremels.—p. 98.
In Vivo Permeability of Red Corpuscles of Rabbit. J. T. Irving and H. D. Kay.—p. 113.
Relation of Secretin Formation to Entrance of Acid Chyme into Small Intestine: Properties of Secretion. J. Mellanby and A. St. G. Huggett.—p. 122.
Nature and Significance of Vagus Escape. R. J. S. McDowall.—p. 131.
Action of Epinephrine and Ergotamine on Uterus of Rabbit. J. H. Gaddum.—p. 141.

Influence of Exercise on Blood and Urine Phosphates.—It is shown by Havard and Reay that after short vigorous unaccustomed exercise the inorganic phosphate in blood first rises a little above, then falls considerably below, the normal value in men. It is thought probable that the changes observed in blood phosphate are due mainly to changes in the lactacidogen content of the muscles. The changes observed in the urine seem to be due mainly to the fleeting acidosis caused by the lactic acid formed.

Production of Pulmonary Edema.—Lambert and Gremels assert that the principal cause of pulmonary edema is the injury to the capillary endothelium, and the greater permeability thereby produced. There is a gradual steady increase in the flow through the coronary vessels in the course of experiment—which may amount to five times the original rate. Since changes in the intima of the cardiac vessels are observed, similar to those described in the lungs, the authors regard this increase as the response of the coronary vessels to the toxic effect exerted by the defibrinated blood. It is suggested that in certain cases of pulmonary edema as observed clinically, similar effects may take place through toxic action of the blood on the pulmonary vessels. This factor may enter into the causation of cardiac edema.

Lancet, London

1: 795-844 (April 17) 1926

Development of Psychopathology: Place in Medicine. B. Hart.—p. 795.
*Blood Sugar Studies in Lethargic Encephalitis. P. K. McCowan, J. S. Harris and S. A. Mann.—p. 802.
*Steam Cautery. H. S. Souttar.—p. 805.
*Electrocardiographic Changes in Rheumatic Carditis. C. W. C. Bain and C. K. Hamilton.—p. 807.
Crossed Dystopia of Kidney. A. J. Compton.—p. 810.
*Lesion of Pons Varolii Occurring Under General Anesthesia. W. J. McCardie and H. W. Featherstone.—p. 810.

Blood Sugar Studies in Epidemic Encephalitis.—McCowan and his associates found on study of cases that in lethargic postencephalitis there is definite derangement of carbohydrate metabolism, as shown by the blood sugar curves. The levulose test does not support the contention that there is definite permanent hepatic insufficiency in lethargic postencephalitis. The majority of lethargic postencephalitis cases show a hyperglycemia following glucose ingestion, markedly sustained in 50 per cent of cases. The mental states of depression and stupor were associated with the most pronounced abnormalities of carbohydrate metabolism. No correlation could be found between the clinical pictures and the types of blood sugar curves obtained. Although no diagnostic value can be placed on blood sugar curves in lethargic postencephalitis, the fact that the only normal curve was obtained in a patient who had recovered from his psychosis suggests that prognostic significance may be attached to them. The hyperglycemia found in all the cases is quite in keeping with the suggestion that lethargic encephalitis is of the nature of a toxemia, usually acute in onset, but becoming chronic in nature.

Steam Cautery.—In the destruction of malignant tumors, Souttar makes use of a slow penetration of heat from a cautery maintained at a low temperature, and this is very conveniently done by a current of dry steam. Souttar uses an instrument of his own device founded on this principle. The cautery is described fully.

Electrocardiograms in Rheumatic Carditis.—Fifty children with evidence of active rheumatic carditis have been examined electrocardiographically by Bain and Hamilton. Lengthening of the auriculoventricular conduction time was present in two cases. Impaired intraventricular conduction was present in one case. Abnormalities in the T wave in leads 2 and 3 occurred in five cases. Extra-auricular systoles occurred in one case. Preponderance of one ventricle over the other was unusual; a right-sided preponderance appeared to have a bad prognosis.

Lesion of Pons Occurring Under General Anesthesia.—One of the cases reported by McCardie and Featherstone was a thrombosis of the basilar arteries during an operation for advanced carcinoma of the breast. The case was one of acute dissemination of a very widely spread cancer. Such patients are toxic, and stop breathing very easily. It is believed possible that the slowing of the circulation from exhaustion led to the clotting of blood, which initiated the chain of events leading to the fatal issue. The second case was an unusual one—temporary recovery of respiration and heart beat in a patient who apparently had died under anesthesia, with a fatal sequel due to associated pontine injury. The heart beat was restored by cardiac massage. Respiration returned after apnea, which had persisted for seventy-five minutes. Stoppage of the circulation in the brain for ten minutes is accepted as the explanation of the fatal issue, which is so frequently the early sequel in cases of restoration of the heart beat by cardiac massage.

1: 845-894 (April 24) 1926

*Neoplasms of Testicle. H. W. B. Cairns.—p. 845.
Endocarditis. III. T. Horder.—p. 850.
*Serum Treatment of Diphtheria. D. MacIntyre.—p. 855.
*Method of Cancer Research. H. Gilford.—p. 858.
*Tuberculous Adenitis Treated by Radium: Fifty Cases. P. Gosse.—p. 862.
*Intussusception Case. D. S. Fairweather.—p. 863.
Skin Grafting in Acute Symblepharon. J. M. Ball.—p. 863.

Neoplasms of Testis.—Cairns reports on seventy-four patients treated by operation—fifty-five by orchidectomy and nineteen by the radical operation. All recovered from the operation and were discharged from the hospital. The rate of recovery is: after orchidectomy, 33.3 per cent, and after the radical operation, 31.2 per cent. These figures are not quite comparable for it so happens that relatively more spheroidal cell tumors were treated by orchidectomy, whereas in most of the cases in which the radical operation was done, the tumors were atypical teratomas and of greater malignancy. It follows that the radical operation was set a harder test than the local operation. On the whole, therefore, Cairns is of the opinion that the results are slightly in favor of the radical operation.

Serum Treatment of Diphtheria.—MacIntyre urges early diagnosis and routine injection in all suspicious cases with antitoxin at the first visit. For the type of case that is virulent from the onset he recommends the administration of large doses of serum partly by intravenous and partly by intramuscular injection.

Method of Cancer Research.—Gilford describes a deductive method of cancer research, a so-called Cartesian method advocated by Descartes some 300 years ago. As applied to the present problem it is based on the proposition that cancer of man is essentially an intrinsic disease, a piece of the man himself, and that for its solution all the data required are at hand. According to this view, the genesis of cancer is an affair of human genetics.

Radium Therapy of Tuberculous Adenitis.—Of fifty cases of tuberculous adenitis treated by Gosse with radium, thirty-seven patients are cured; nine, improved; three, not improved, and one, dead. The glands to be treated, having been carefully located and palpated, are marked out on the overlying skin with a dermographic pencil. Over these localities "half-strength" plates, i. e., plates covered by 2.5 mg. radium element to each square centimeter surface and covered by a sheet of Monel metal 0.3 mm. in thickness, are applied and held in place by pieces of adhesive plaster.

Intussusception.—The unusual features in Fairweather's case are: (1) the age of the patient, 14 years; (2) the alleged absence of blood in the feces; (3) the site of the intussusception, 18 inches (46 cm.) of the ileum; (4) the almost uneventful recovery after such an extensive resection and on a patient who had suffered five days before operation.

Medical Journal of Australia, Sydney

1: 287-314 (March 13) 1926

Antenatal Supervision: 1,042 Cases. R. M. Allan.—p. 287.
Surgery and Surgeons in Edinburgh and Sydney Over Forty Years Ago. R. S. Skirving.—p. 290.
*Intermediate Hosts of Fasciola Hepatica. A. C. McKay.—p. 300.

Intermediate Host of Fasciola Hepatica.—McKay records the fact that it has now been proved that *Limnaea brazieri* is definitely an intermediate host of *Fasciola hepatica* in New South Wales. In *Limnaea brazieri*, he has found at least three types of cercaria. All three types are obviously fasciolid cercaria. The relationship of *Limnaea* to the liver infestation was proved experimentally on animals.

1: 315-342 (March 20) 1926

Insanity. W. A. T. Lind.—p. 315.
Rightsided Enteroptosis Alias Chronic Appendicitis. H. C. R. Darling.—p. 324.
*Fulminating Purpura. H. H. Bullmore, I. M. Little and R. B. Lahz.—p. 329.

Fulminating Purpura.—Bullmore and his associates are convinced that in the case they report, there can be no doubt that the condition was due to hemolysis and that the organism was recovered from the blood both before and after death. The history of the illness would indicate that the malaise and headache were the symptoms of the onset of the toxemia, which terminated as a septicemia, the outstanding features being a fulminating purpura. It is surmised that the portal of entry was the tonsils.

Annales de l'Institut Pasteur, Paris

40: 169 251 (March) 1926

Tryparsamide in Treatment of Sleeping Sickness Laigret —p 173
Typhoid Fever in Guinea Pigs M Gory and J Dalsace —p 194
*Toxin Formation in Frozen Brain Cortex A Speransky —p 213
Culture Filtrates in Treatment of Suppurations N N Bourdenko and N L Givago —p 232
Coagulation of Yolk by Bacterial Diastase E Lagrange —p 242

Production of Toxin by Tissue Freezing—In Speransky's experiments, a circumscribed portion of the brain cortex in dogs was treated with liquid carbon dioxide through the intact dura This induced an acute toxic encephalitis, with convulsions similar to epileptic seizures in man The carbon dioxide was applied to various occipital and parietal parts of the brain cortex except the motor centers, the phenomena were always the same There were no convulsions if the frozen area of the cortex was removed immediately Its removal after appearance of tonic convulsions did not arrest them The frozen part of the cortex from dogs in an epileptic condition was implanted beneath the dura mater (beyond the motor zone) in two healthy dogs They developed phenomena of epilepsy There seems to be a substance produced in the frozen nerve tissue which has a toxic action on the nervous system—a neurotoxin or rather an autoneurotoxin Immunization against the autotoxin was realized by repeated, gradually increased applications of the carbon dioxide, immunity was manifest in 15 per cent of the dogs surviving after an otherwise lethal application of the freezing procedure Immunity was induced also with implants of the frozen brain tissue Research is now under way on the prophylactic and therapeutic action of serums from immunized animals on different nervous manifestations in dogs The freezing procedure was applied to the thyroid, testicle or salivary gland, and changes appeared in the symmetrical organ, suggesting the action of a specific toxin It is possible that a toxin from freezing of cancer tissue might reduce the malignancy of the tumor, thus indirectly reenforcing the defensive forces

Annales de Médecine, Paris

19 81 240 (Feb) 1926

* The Rheumatic Disease ' F Bezançon et al —p 81

Specific Character of Rheumatic Disease—This entire issue is devoted by Besançon Weil, Letulle and Guillaumin to a review of the various aspects and treatment of what they call *la maladie rhumatismale* They insist that it is of infectious origin, induced by a specific virus, different from ordinary bacteria Contagion may occur long before the appearance of an acute attack This rheumatic disease does not present recurrences of acute attacks, it is a chronic disease developing possibly in waves The heart is the most important localization of the rheumatic infection Heart disease is its constant manifestation, and this is slowly progressive, always chronic, with an adhesive tendency Joint lesions, on the other hand do not always accompany the rheumatic malady Arthritis may be entirely lacking in young children, the heart disturbances then are the only symptoms of the disease This may occur also in adults Nodular myocarditis is the specific lesion of the rheumatic heart They discuss the secondary heart block arrhythmias and aortitis—which may all be of rheumatic origin They report cases of rheumatic pleurisy, and describe the blood picture in acute articular rheumatism While sodium salicylate is considered as the specific remedy of acute articular rheumatism, shock therapy may prove a powerful adjuvant

Archives de l'Institut Pasteur de Tunis

14 355 509 (Dec) 1925 Partial Index

*Experimental Convalescents Serum in Prevention of Typhus C Nicolle and E Conseil —p 355
*The Influencing of One Microbian Race or Species by Another E Burnet —p 384
Misuse of Cannabis in Tunis Cannabism Bouquet —p 404
Experimental Research on Hemolysis H Diacono —p 441
Scientific Mission Across the Sahara Desert P Durand —p 469

"Convalescents' Serum" from Animals in Prophylaxis of Typhus—Nicolle and Conseil report that experimental typhus in the ass resembles that in the guinea-pig but the blood of the ass is less virulent during the febrile stage In both these animals, however, the proteus bacteriologic test is negative but each produces an abundance of antibodies It might be possible to enhance the antibody production in the ass serum by reducing the animal's resisting powers (venesection superposed mild infection, or the like), repeating the inoculation did not seem to answer the purpose Certain antimicrobic serums seem to owe their action to the infection induced by the primary inoculation, and not to repetition of the inoculations The ass serum, in this case, is equivalent to a convalescent's serum, and they advocate its use in place of human convalescent serum in preventive work They suggest that this principle of utilizing the serum of cured asses might be applied in prevention of measles

The Influencing of One Microbian Race or Species by Another—Burnet's research was mainly with the paramelitensis and the way it influenced other microbes cultivated with it Both the antigen properties and the agglutinability could thus be transformed by the interaction not only of bacteria of the same types but of different species The modifications recall the phenomena of transmissible lysis, and the way in which bacteria resistant to the bacteriophage become modified in shape and antigen properties by its action His research further sustains the idea of the variability of microbian types and of cells in general, the complexity of species and gradation of varieties from the standpoint of a given characteristic also the heterogeneity of microbian cultures, and the orientation of the variations, which seem to occur always in a natural definite sense and to be irreversible

Archives des Maladies de l'Appareil Digestif, Paris

16 273 393 (March) 1926

The Respiratory Quotient L Dautrebande —p 273
Correlation of Physiologic Factors of Digestion C Oddo et al —p 288
Specific Follicular Lesions in Gastric Ulcer P P Ravault and J Creyssel —p 315
*Insulin Treatment of Gastric Ulcer R Feissly —p 325

Insulin Treatment of a Recurring Gastric Ulcer—Daily injections of 15 units of insulin, for twelve days induced healing of a recurring ulcer in the lesser curvature in a woman aged 37 The cicatrization of the ulcer, Feissly says was confirmed by roentgenograms The treatment was based on two facts, namely, the increase of the alkali reserve in nondiabetic patients under the use of insulin and the fact that experimental findings have shown that the more pronounced the acidity of the humors in dogs, the slower the healing of wounds Balint's recent research also tends to prove a disturbance of the acid-base balance with ulcer The technic used now by Feissly is as follows 5 10 and 15 units are given the first three days then 30, 40 and 50 units, daily in two injections The injections are made before meals rich in carbohydrates Malt extract is prescribed besides, if there are signs of hypoglycemia The duration of the course of treatment is from three to four weeks

Archives de Médecine des Enfants, Paris

29: 129 184 (March) 1926

Growth in Rickets G Variot and V Nazarie —p 129
*Cholesteremia of Children R Baranski —p 139
*Vaccine Therapy of Typhoid in Children N Spyropoulos —p 150
Contracture of the Arm in Acute Anterior Poliomyelitis L Babonneix and L Pollet —p 156
Glaucoma in Children J Comby —p 161

Cholesteremia in Children—The cholesterol content of the blood was determined by Baranski in ninety-five children of different ages Variations of the cholesterol in healthy infants appeared the same as in healthy adults Tuberculosis or other infectious diseases induced in children the same changes of cholesterol content in the blood as in adults In syphilitic children the *cholesterol* was lower than in syphilitic adults The cholesteremia was abnormally low in children with dystrophic disturbances, also in acute alimentary toxicoses It rose gradually as improvement progressed

Vaccine Treatment of Typhoid in Children—Spyropoulos applied intravenous injections of antityphoid vaccine in treatment of fifty children, aged from 2 to 15 In thirty-two cases a single injection brought about the gradual subsidence of fever and remarkable improvement, without any by-effects.

Convalescence was rapid in all. In four cases a second injection was given after two or four days. In two instances no effect was apparent. The results seemed to be better with an autogenous vaccine.

Bruxelles-Médical, Brussels

6: 654-688 (April 4) 1926

Surgery in Chronic Intestinal Stasis. Delangre.—p. 654.
Pathologic Anatomy of Epidemic Encephalitis. R. A. Ley.—p. 662.
*Syphilitic Reinfection and Tabes. Poirier.—p. 665.

Syphilitic Reinfection in Course of Tabes.—Poirier treated a chancre in a man with tabes, aged 44. The chancre was accompanied by swelling of glands and roseola. The Wassermann test elicited a positive reaction. This chancre had developed seventeen years after the first infection with syphilis and its primary chancre. He queries whether the first infection was with the neurotropic virus and the second with a dermotropic virus, or whether the first infection had never been cured.

Gynécologie et Obstétrique, Paris

13: 161-239 (March) 1926

Should Gynecologic Patients Be Told About Their Operation? J. Vanverts.—p. 161.
*Ovary Grafts in the Uterus. M. G. Serdukoff.—p. 164.
*Cause of Higher Metabolism in Pregnancy. Garipuy et al.—p. 172.
Absence of External Genital Organs. R. Choisy.—p. 177.
Genito-Abdominal Tuberculosis in Women. E. Toneff.—p. 205.

Intra-Uterine Transplantation of Ovary.—Serdukoff transplanted an ovary into the uterus in two sterile women at a laparotomy for salpingitis. Contrary to American and French operators, the ovary was implanted, not in the posterior wall of the uterus, but in the horn, on account of the intense vascularization in this region. He emphasizes that the abdominal surface of the ovary transplant should not be covered by peritoneum, since this may interfere with the regular rhythm of ovulation. Conservation of at least one ligament of the ovary, with intact vessels, is another important condition. The two women were reexamined six months later. All pains had disappeared completely, and menstruation was normal. The future will show if the results are complete, namely, if conception occurs.

Origin of Increase of Metabolism in Pregnancy.—Garipuy, Lassalle and Sendrail found clinical signs of exaggerated thyroid functioning only in one of sixteen pregnant women. They conclude that the higher basal metabolism in pregnancy is not connected with any thyroid reaction. Products eliminated by the fetus and placenta seem to stimulate the metabolism in the maternal organism, thus acting like hormones.

Lyon Médical

136: *675-706, 1925*

Transient Weakening of the Heart in Tuberculosis. Dumas and Mollard.—p. 675.
*Multiple Anaphylaxis. L. Duvernay.—p. 678.

Multiple Anaphylaxis.—*Duvernay's patient presented anaphylaxis* which at first had been specific for milk and cows, but later the manifestations appeared from any toxic influence, sore throat, intestinal derangement, vaccine, strawberries or mosquito bite. The attacks were evidently of the colloidoclasis type, with vasodilatation, periods of pulmonary edema, asthma, urticaria, Quincke's edema and similar manifestations in joints—an actual acute articular rheumatism, the joints swelling and painful within an hour, the condition returning to normal in three hours. The only symptoms lacking from the clinical picture of anaphylaxis were migraine and eczema. The case further demonstrates the inhibiting action of an emotional shock, also of pregnancy, and especially of colchicin. Colchicin pills arrested the urticaria or reduced it, and Duvernay queries whether its efficacy in gout may not be explained by the assumption of an anaphylactic element in gout.

Revue Médicale de la Suisse Romande. Geneva

46: 197-260 (March 25) 1926

*Cystic Neuroglioma of the Cerebellum. C. Perret.—p. 197.
Visualization of Gallbladder. Roch and Katzenelbogen.—p. 215.
*Syphilis in the Third Generation. G. Cornaz.—p. 220.
The Bex-les-Bains Mineral Waters. R. F. Chollet.—p. 228.

Cystic Neuroglioma of the Cerebellum.—Perret treated a man, aged 32, with the diagnosis of a cystic tumor, probably located in the right cranial fossa. At that time the patient was blind and in a comatose condition. The skull was punctured at that point, and 20 cc. of a limpid fluid was released. This was followed by immediate relief, and rapid disappearance of all the symptoms. A week later the patient was able to walk and write letters. In six weeks the condition grew suddenly worse. The puncture was repeated and followed by trephining and draining. He recovered and went back to his regular occupation. The recovery persisted for three years. Then a recurrence required a second trephining, with restoration to health for two years. A second recurrence did not yield to any measures, and the patient died in coma. At necropsy the tumor appeared to be a neuroglioma with cystic degeneration. A fall on the back of the head at the age of 7, which had induced two epileptiform seizures in childhood, and severe headache at puberty, may have caused formation of a neuroglioma after a long period of incubation.

Syphilis of the Third Generation.—The history of Cornaz' patient is as follows: Her father had contracted syphilis eighteen months before she was born. Twice she was treated for keratitis and now presents corneal opacities, with evidences of dystrophic disturbance in bone and teeth from unmistakable congenital syphilis. Married at 29, she gave birth to two apparently healthy children within six years. Then came a third infant, stillborn. Necropsy disclosed congenital syphilis with spirochetes in the organs. Syphilis, Cornaz says, was positively excluded in the husband. The case shows how ineffectual is local treatment in congenital syphilis. Only intensive and prolonged general therapy should be employed, even if the Wassermann test is negative.

Schweizerische medizinische Wochenschrift, Basel

56: 289-312 (April 3) 1926

Laryngeal Tuberculosis. J. Stephani.—p. 289.
'Extraction of Cataract.' A. Vogt.—p. 294.
"Diagnosis of Pituitary Tumors." A. Vogt.—p. 295.
*Hammock Treatment of Psychoses. M. Tramer and M. Esther.—p. 296.
Sterile Dressings. P. Jung.—p. 297.

Hammock Treatment of Psychoses.—Tramer and Esther recommend a closed hammock in treatment of excited psychopaths.

56: 313-336 (April 10) 1926

*Radiotherapy of Gynecologic Cancer. W. Fürst.—p. 313.
Influenza Epidemic 1924-1925. E. Liebmann.—p. 321.
A Historical Double Monster. A. Reh.—p. 324.
"Autoserotherapy in Pleurisy." Chapuis.—p. 325. Reply. Pometta.—p. 3 6.

Radiotherapy of Gynecologic Cancer.—Fürst applies preparatory roentgen irradiation, then extirpates the tumor. If the tumor remains inoperable, he continues with radium or roentgen rays.

Pediatria, Naples

34: *337-392 (April) 1926*

Meiostagmin Reaction in Leishmaniasis. M. Giuffre.—p. 337.
*Blood Platelet Count in Infants. G. Roi.—p. 350.
*Achondroplasia. C. Giaume.—p. 359.
Amaurotic Family Idiocy. F. de Nicolo.—p. 370.

Blood Platelet Count in Infants.—Roi believes that he found occasionally a diminution in the number of blood platelets after meals in infants.

Achondroplasia.—Syphilis was probably responsible for the achondroplasia in Giaume's case.

Policlinico, Rome

33: *469-503 (April 5) 1926*

Balantidium Dysentery. P. Alessandrini and A. Piattelli.—p. 469.
Pathology and Therapy of Cancer. L. Manara.—p. 474.
Iliac Thrombophlebitis. D. Taddei and G. Millul.—p. 477.
Radiologists and Practitioners. E. Pazzi.—p. 497.

33: 505-539 (April 12) 1926

Recurrence of Gallstone Around a Foreign Body. R. Pini and A. Catterina.—p. 505.
*Lesieur's Symptom in Typhoid. S. Trentini.—p. 511.
Organic Mycoses. C. Basile.—p. 515.

Lesieur's Symptom in Typhoid.—*Trentini confirms the* frequency of Lesieur's sign in typhoid, namely, a slight dulness at the base of the right lung ("retrohepatic"). He attributes it to a pleuritic localization of the infection, if it appears early. When it appears later, it constitutes the true sign of upward displacement of the enlarged liver.

33: *177-224* (April 1) *1926.* Medical Section

*Amebic Liver Abscess. T. Pontano.—p. 177.
Liver Atrophy and Multiple Sclerosis. G. Antonelli.—p. 202.

Amebic Liver Abscess.—In five of Pontano's twenty-five cases of amebic abscess of the liver, the Wassermann reaction was positive, although only one of them had syphilis.

Riforma Medica, Naples

42: 289-312 (March 29) 1926

Great Mistakes and Small Signs. *G. Boeri.—p. 289.*
Gonorrhea in Abnormal Sex Organs. G. del Vivo.—p. 295.
*Babinski Sign in Toxicoses L Pezzotti.—p. 297.

Babinski Sign in Toxicoses.—Pezzotti observed a positive Babinski phenomenon in a case of atropine poisoning.

42: 313-336 (April 5) 1926

Surgery of Tuberculous Peritonitis. M. Bufalini.—p. 313.
*Contralateral Warning Zone in Pneumothorax. A. Campani and E. Fiori. —p. 314.
Dental Prosthesis in Digestion Disturbances. C. D'Alise.—p. 324.
Malignant Tertian Malaria. A. Tarsitano.—p. 328.

Contralateral Warning Zone in Pneumothorax. — Campani and Fiori confirm the frequency of Campani's contralateral warning sign in artificial pneumothorax with adhesions, kept at high pressure. It consists in a pleuropulmonary congestion localized in the fifth to the seventh interspace in the axillary line. It indicates the danger of pleurisy on the pneumothorax side. The symptom is usually transitory, unless the insufflations are pushed. It is more frequent on the left side. They are inclined to explain it by some mechanical indirect compression rather than by a sympathetic reflex.

Rivista di Clinica Pediatrica, Florence

24: 145-216 (March 22) 1926

*Celiac Disease of Pancreatic Origin. L. Magni and E. Pirami.—p. 145.
Herpes Zoster and Chickenpox. F. Lo Presti-Seminerio.—p. 165.
Blood in Avitaminosis. S. Gandolfo.—p. 170.
Ultraviolet Rays in Spasmophilia. E. De Micheli.—p. 176.
Pathogenesis of Spasmophilia. E. De Micheli.—p. 184.

Celiac Disease of Pancreatic Origin.—Magni and Pirami report a case of intestinal infantilism. The chronic diarrhea, with steatorrhea, was quite pronounced. They attribute the disease to a disturbance of the pancreas.

24: 217-288 (April 10) 1926

*Tuberculous Orchiepididymitis. F. Allodi.—p. 217.
The Kottmann Test. D. Bottacin.—p. 227.
The Benzoin Test. P. Dotti.—p. 236.
*Liver Lesions and Tetany. D. Larini.—p. 249.

Tuberculous Orchiepididymitis.—Allodi deplores the somatic and mental sequels of surgical treatment of tuberculous orchiepididymitis, especially in children. Besides this, it seems to induce generalization of the disease. He gives every other day, or twice a week, subcutaneous iodine injections, with a rest for ten days after each two months of treatment. The formula is 1 Gm. of iodine; 2 Gm. of potassium iodide, and 100 Gm. of distilled water: Inject 1 cc. He reports good results in seven children from 2½ to 4 years of age.

Liver Lesions and Tetany.—Larini reports two cases of tetany in children with grave fatty degeneration of the liver, revealed by necropsy. He regards these lesions as the cause of the syndrome.

Boletin de la Soc. de Obstet. y Ginec., Buenos Aires

4: *575-617, 1925.* Partial Index

Laparotomy for Bladder Stone on Hairpin. Ahumada.—p. 588.
Bougie Perforates Uterus and Migrates to the Spleen. F. F. Carranza and H. R. Martinez Leanes.—p. 590.
*Serologic Test for Cancer. N. Capizzano.—p. 597.

The Roffo Stain Test for Cancer.—Capizzano has confirmed in the field of gynecology Roffo's statements in regard to the differential importance of the color reaction when five drops of a 0.03 per cent solution of neutral red are added to 2 cc. of blood serum. In twenty-five women, normal or with nonmalignant affections, or pregnant women, the tint of the fluid was constantly yellow. In twenty-four cases of cancer of the cervix or body of the uterus, the tint of the fluid changed to pink in 70 per cent. In the discussion that followed, Carranza stated that he had found the reaction positive in a case of a precancer leukoplakia of the uterus, and others confirmed that a previously positive reaction became negative in two months after removal of the cancer. Roffo has found that profusely secreting malignant tumors yield a larger percentage of positive reactions. With skin cancer, the proportion of positive responses was not over 30 per cent.

Gaceta Médica de Caracas

32: *337-352, 1925*

**Protracted Fevers at Caracas.* J. C. Rivas Morales.—p. 337.
*Idem F. A. Risquez.—p. 339.
Epicondylalgia. Villegas Ruiz.—p. 341.
Medical Geography of State of Miranda. González and Quintero Arellano.—p. 342. C'cn.
Malta Fever in Zamora District. R. A. Blanco.—p. 350.

Priority in Differentiation of Paratyphoid Fever. — Rivas Morales relates that Jan. 2, 1896, Mosquera and Risquez called the attention of the local medical society at Caracas to series of cases of an anomalous typhoid fever, a pseudotyphoid. They ascribed it to a virulent type of colon bacillus. Their report was published four months later in the organ of the society, and the data were examined by Gilbert at Paris and by Penny and Kinyoun at Washington. In November, 1896, Achard and Bensaude, Paris, called attention likewise to infections which they designated as paratyphoid, with bacilli intermediate between typhoid and colon bacilli. Their bibliography (1904) contained *no mention* of Mosquera or Risquez. Risquez adds that the alleged myth of "typhomalaria" was placed on a solid footing by his discovery of bacilli of the typhoid group and malaria parasites in the same microscopic field.

32: 353-368, 1925

Death from Inhibition. J. de D. Villegas Ruiz.—p. 353.
Chemical Reaction of Secretions and Excretions in Relation to the Food. J. B. Ascanio Rodriguez.—p. 356.
Prophylaxis of Leprosy. Idem.—p. 360.
Medical Geography of State of Bolivar. A. L. Briceño Rossi.—p. 361. C'td.
**Guacarapa Fever. F. R. Garcia.—p. 368.*

Guacarapa Fever.—Garcia states that an endemic fever in the Guacarapa region of Venezuela bears a close resemblance to Rocky Mountain fever. It has a high mortality, usually proving fatal the seventh to the ninth day.

Patolojia Geral, Rio de Janeiro

11: 1-32 (Jan.) 1926

*The Kahn Test. M. Magalhães and H. Crespo de Castro.—p. 1.
Parasciatica and False Sciatica. A. Gonçalves Valerio.—p. 5.
Relations Between Development of the Brain and of the Suprarenals. J. Moreira da Fonseca.—p. 15.

The Kahn Serologic Test in Syphilis. — Magalhães and Crespo de Castro report new series of tests which confirm the findings of their previous series. In their 180 subjects, there were 21 in the primary stage of syphilis, 25 in the second and 19 in the third stage, with 51 in a latent phase, 31 with congenital syphilis, and 43 with a negative Wassermann reaction. All were tested with both the Wassermann and the Kahn technics, and the findings harmonized in 97.8 per cent. The discordance of 2.2 per cent was in favor of the Kahn test as being more sensitive. In only 0.5 per cent was the Wassermann positive with a negative Kahn. The intensity of the reactions coincided in 84.4 per cent; the Kahn findings were more pronounced in 15.6 per cent.

Revista de Cirugía, Buenos Aires

4: *241-288* (Dec.) 1925

*Treatment of Fractures with Aid of Metal. J. Valls.—p. 241.
*Improved Technic for Disarticulation of Hip Joint. V. Sanchis Perpiñá and R. Diaz Sarasola.—p. 253.
Delbet's Method in Fracture at the Ankle. Avelino Gutiérrez.—p. 358.
Surgery in Cholelithiasis. Alberto Gutiérrez.—p. 263.
Nephropexy by Gutiérrez Method. J. Hertz.—p. 275.
Arthroplasty of Elbow. Angel Gutiérrez.—p. 276.
False Diverticulum of Bladder. Bolo and Jürgens.—p. 281.
Fibrous Epulis. A. Buzzi.—p. 286.

Metal Bolts, Screws and Wire in Reconstruction of Bone After Fractures, and Remote Results.—Valls' roentgenograms sustain his assertion that the ultimate outcome could not be better than was actually realized in the nineteen patients recently reexamined from one to eleven years after the "metallic osteosynthesis." There had been no disturbances or by-effects from the metal implant in any instance. No special tolerance for either brass or steel was noted; both healed in place equally well. He has seen screws that had been removed from the greater trochanter after several years, and none of them had lost in weight; the screw had to be unscrewed to extract it.

Disarticulation of the Hip Joint.—Perpiñá and Sarasola claim superiority for their technic as it provides a fine stump while the incision avoids the large blood vessels, and they are easily ligated later. The limb in extension and slight abduction, the incision is carried at one stroke down through the capsule of the joint, the line running from 2 cm. below and inside the middle point of the inguinal groove to the tuberosity of the ischium. The only vessels severed are small ones. Then the head of the femur is twisted out of its socket, tearing the ligament. Rotating the thigh outward, increasing abduction, brings the femoral vessels into greater prominence, and a double ligature is applied. They prefer to ligate below the origin of the deep femoral, respecting the external circumflex. The almost right-angled cicatrix parallels the inguinal groove and extends on the thigh, not reaching the base of the stump. Six illustrations.

Archiv für Gynäkologie, Berlin

128: 1-390 (March 25) 1926

Follicles in the New-Born. H. Hartmann.—p. 1.
*Blood Sugar in Mother and Fetus. K. Hellmuth.—p. 11.
*Glycogen in Fetal Vagina. O. Gragert.—p. 43.
*Virulence of Vaginal Germs. N. C. Louros.—p. 48.
Leukorrhea from Uterus and Vagina. R. Schröder et al.—p. 94.
Interstitial Ovarian Gland. R. Mey.—p. 177.
Complications of Myomas. H. Schultheiss.—p. 210.
Ruge-Philipp Virulence Tests. F. Baake.—p. 230.
*Treatment of Syphilis in Pregnancy. Kraul and Bodnar.—p. 238.
*Rectal Cancer and Pregnancy. H. Katz and F. Kaspar.—p. 250.
Pigment Metabolism of Liver in Pregnancy. H. Eufinger and C. W. Bader.—p. 293.
Indicanemia in Pregnancy. H. Eufinger and C. W. Bader.—p. 309.
Movements of Tubes. F. v. Mikulicz-Radecki.—p. 318.
Cytology of Peritoneal Fluid. E. Vogt.—p. 363.
Treatment of Syphilis in Pregnancy. E. Klaften.—p. 371.

Blood Sugar in Mother and Fetus.—Hellmuth prefers the Folin-Wu method and sodium fluoride, which prevents glycolysis. The blood sugar is normal in pregnancy, and frequently becomes lower in the last two months. In eighteen of twenty-five labor cases, the blood sugar rose considerably (up to 228 mg. per hundred cubic centimeters). The blood sugar in the new-born child is always lower than in the mother, but it changes parallel with it.

Glycogen in Fetal Vagina.—Gragert found a large amount of glycogen in the squamous cells of the vagina in a fetus 16 cm. long.

Virulence of Vaginal Germs.—Louros explains the "blood virulence" of germs as detected by the Ruge-Philipp tests as only the maximum of virulence. His method (resistance to a 0.5 per cent solution of methylene blue) allows registration of lower grades of virulence—such as are sufficient for infection of the tissues, including the *peritoneum*. When he smeared such cultures on pieces of placenta, uterus, fat and peritoneum, and incubated, the germs grew into the tissue. Germs which were not resistant against methylene blue, remained on the surface. Avirulent germs produce much more acid from dextrose than the resistant and virulent strains. Therefore, the acidity of the vagina depends on the virulence of the germs. Hemolytic properties disappear in acid mediums. Virulent hemolytic germs do not produce enough acid, and therefore remain hemolytic. Avirulent hemolytic germs become anhemolytic. Virulent and resistant germs require higher temperatures for disinfection, and take stains only slowly.

Treatment of Syphilis in Pregnancy.—Kraul and Bodnar demonstrated the presence of arsenic and bismuth in the organs (including the brain), blood and amniotic fluid of fetuses whose *mothers had been receiving antisyphilitic treatment*. The placenta takes an active part in the transmission of the drugs. No stage of a pregnancy is too far advanced for the treatment, but if it is started early, hardly any of the children show signs of syphilis.

Rectal Cancer and Pregnancy.—Katz and Kaspar find a carcinoma of the rectum as a not entirely rare complication of pregnancy. In some cases, the development of the cancer seems to be in connection with the pregnancy, and there is recurrence of the tumor in the next pregnancy. This applies *especially to women with a cancer heredity and with polyps of the rectum*. The prognosis is comparatively good. It would be still better if the complaints of pregnant women as to rectal disturbances were always answered by examination of the rectum.

Archiv für klinische Chirurgie, Berlin

139: 667-787 (March 30) 1926

*Sympathectomy and Asthma. C. Rohde.—p. 667.
Surgery of the Pituitary. A. N. Bakulew.—p. 679.
*Tuberculosis of the Kidney. A. Westerborn.—p. 699.
Hemangioma of the Dura. E. Gold.—p. 729.
Lacing Closure of Wound. E. Gohrbandt.—p. 762.
Why Gastropexy Fails. E. Schneider.—p. 767.
Blood in Varicose Veins. Lasch and Billich.—p. 777.
Double Intestinal Occlusion. G. Alipow.—p. 782.
"Aberrant Endometrium." A. Lauche.—p. 785.

Sympathectomy and Asthma.—In a man with unbearable asthma, Rohde extirpated the whole of the left cervical sympathetic chain, down to the first thoracic ganglion. The patient died thirty-two hours later in a grave attack of asthma and pulmonary edema. The changes, however, were much more pronounced on the right side than on the left.

Tuberculosis of the Kidney.—Westerborn reports recovery *after nephrectomy in 40 per cent of the men, and 73.2 per* cent of the women (121 cases). He saw miliary tuberculosis developing shortly after catheterization in seven patients—mostly with strictures.

Archiv für Psychiatrie und Nervenkr., Berlin

76: 513-670 (Feb. 26) 1926. Partial Index

*Motor Function, Body Build and Character. M. Gurewitsch.—p. 521.
*Recent Religious Epidemic in Russia. H. Goldbladt.—p. 558.
Central Action of Cocain and Its Substitutes. Offermann.—p. 600.
Rotation of Body Around Longitudinal Axis in Cerebellar Disease. J. Gerstmann.—p 635.

Motor Function, Body Build and Mental Characteristics.—Gurewitsch lists five different types of constitutional substandard motor functioning. They are usually accompanied by backward mental development, but not always. There seems, however, to be a connection between the motor function, the build and the mental condition. His research supplies the gap in the Kretschmer schizoid-pyknic-asthenic-athletic classification. The correlation between the constitutional build and the mental faculties is still more manifest when the motor functioning is included in the chain. There is a close connection between the handwriting and the constitution.

The Recent Religious Epidemic in Russia.—Goldbladt discusses the psychic epidemic which developed in Ukraine and spread over a large part of Russia in 1920-1923. This religious epidemic was based on the renovation of old religious paint*ings in churches and homes*. They lost their aspect of age and shone clean and bright as new. The miracle in a village home attracted crowds of 50,000 people and imposing religious services were held. He thinks the foundation for the superstition of the miracles was the cleansing and brightening effect of certain unusual atmospheric conditions *on the cupola* of the large church at Kiev. The people got the idea that religious objects were being miraculously renovated, and the mass suggestion spread so they imagined the old pictures looked as if they were rejuvenated. Here and there some ikon was surreptitiously cleaned, but as a rule the whole was based on autosuggestion, with visions and blurring of consciousness; there were no hysteric motor phenomena. The "ikon renovation" epidemic was distinguished more by its wide spread than by the intensity of the pathologic psychic picture. Six of twelve persons examined, presenting extreme cases of the delusion, were mentally substandard, hysterical women and girls The larger the number of persons involved in such a religious epidemic, the greater the tendency for the mentally healthy to be drawn into the circle He lays special stress on the numerous instances in which the people longed and prayed for the miracle to happen in their village or home, and their concentrated yearnings finally brought the miracle to pass before their eyes under the influence of religious faith, superstition privations, and the emotional strain of the war and the famine, etc

Beitrage zur klinischen Chirurgie, Berlin

135: 223 390 1925

*The Roadway in the Stomach K H Bauer —p 223
Deep Pressure Sensation W Lehmann —p 253
*Transplantation and Vital Storing Lehmann and Tammann —p 259
Study of Roentgen Dosimeters H Kalkbrenner and H Kustner —p 303
Painful Lipomas of Spermatic Cord K Werwath —p 325
Diverticula of Sigmoid Flexure G H Feist —p 338
Buried Drain in Biliary Passages G H Feist —p 360
Hypnosis Induced in Animals H F O Haberland —p 370
Waxy Degeneration of Muscles with Granuloma in Bone Marrow R Schmidt —p 378

Extirpation of the Roadway in the Stomach—Bauer's illustrations show the arrangement of the folds in the stomach which form a lengthwise track or roadway along which the food slides and which seems to be the exclusive site for round ulcer formation Ulcers elsewhere were of other nature in his experience This lengthwise tract seems to differ histologically from the rest of the stomach He presents data to prove that it is a rudimentary survival the natural continuation of the esophagus deep into the stomach The circulation corresponds to that of the esophagus, and defects do not heal here as elsewhere in the stomach He has been experimenting on dogs with extirpation of this strip down through the stomach and has applied the procedure in one clinical case with apparently complete recovery He reiterates in conclusion that whatever the primary factors may be, round gastric ulcer develops almost invariably in this tract, the *Magenstrasse*

Transplantation After Blocking the Defensive Forces—Lehmann and Tammann use the term *Vitalspeicherung* to express subcutaneous injection of a dye (trypan blue) to block the reticulo endothelial system When this was done preliminary to transplantation of a skin flap from another animal of the same species (mouse), the transplant healed in place, while this never occurred without the preliminary vital storage treatment Twenty-six colored plates show the details of the research, the findings sustaining, they say, the assumption that the blocking of the reticulo endothelial system prevents the natural reaction to cast off the foreign body The organism accepts it passively, as it were, and proceeds to supply it with blood, etc, as if it were part of the original organism This theory was confirmed by the successful healing of a second flap after blocking the reticulo endothelial apparatus when a previous transplant, while this apparatus was functioning normally, had been speedily cast off

Deutsche medizinische Wochenschrift, Berlin

52 517 556 (March 26) 1926

Occultism and Criminality E Meyer —p 517
*Vulvovaginitis in Children E Vogt —p 520
Arthropathies and Sedimentation E Einstoss and T Hirsch —p 524
*Treatment of Partial Deafness E Wodak —p 526
Wryneck Bohm —p 529
*Møllgaard s Serum Opitz and Kotzulla —p 531
*Facial Paralysis in Otitis P Manasse —p 532
*Prognosis of Scrofula O Connerth —p 533
Concentrated Insulin Kolle —p 536
Treatment of Furunculosis W Rosenau —p 537
Campaign Against Tuberculosis P Hollmann —p 537
Medical Writing W Heydorn —p 539
Autohemotherapy T Hirsch —p 551

Vulvovaginitis in Children—Vogt points out that the urethra, cervix and rectum are much more frequently affected in the vulvovaginitis of little girls than has hitherto been assumed The long duration of the disease is explained by this The spreading of gonococci upward through the uterus and tubes is not infrequent This occurs sometimes at the onset of menstruation, after a long period of quiet Potentia coeundi might suffer by concretion of the labia and stenosis of the vagina Sterility is quite frequent

Treatment of Partial Deafness—Wodak has been trying large doses of arsenic in 100 patients suffering from otosclerosis and other affections impairing the hearing more or less He gave daily two pills, each containing 5 mg of sodium arsenate, and in grave cases, three or four pills The total amount given was about 300 mg An interval of three or four months followed He had fair results in two-thirds of his otosclerosis patients and in a similar proportion of other diseases

Møllgaard's Serum—Opitz and Kotzulla found no experimental evidence of antitoxic properties of Møllgaard's serum Its action did not differ from that of normal beef serum They claim that this control was omitted by Møllgaard

Facial Paralysis in Otitis—Manasse does not consider a facial paralysis occurring in the course of acute inflammation of the middle ear as indication for trephining

Prognosis of Scrofula—Connerth's statistics indicate that only a comparatively small percentage of those who have had scrofula are later affected by grave pulmonary tuberculosis

Deutsche Zeitschrift fur Chirurgie, Leipzig

195: 1 144 (March) 1926

Surgery of Cholelithiasis H Haberer —p 1
*Repair After Irrational Biliary Surgery P Walzel —p 26
Ideal Cholecystectomy J Doberer —p 28
Treatment of Intra Articular Fractures A Wittel —p 42
Treatment of Subcutaneous Fractures A Eiselsberg —p 52
Insulin in Surgery A Orator —p 57
Autohemotherapy in Sepsis W Linhart —p 69
Volvulus of the Stomach H Haberer —p 80
Treatment of Avulsion of the Diaphragm A Orator —p 89
Treatment of Empyema E Bouvier —p 92
Instruments for Gastro Intestinal Surgery O Maier —p 95
*Tests for Blood Transfusion E Metzler —p 99
Operation for Double Cleft Palate and Harelip H Pichler —p 104
Exogastric Granulomatous Carcinoma Knoflach and Eichelter —p 107
Sarcomatosis of the Skin F P Haberern and L Karelins —p 119
Acidosis in Surgery T Loessl —p 128
"Water Bed" Beck —p 137 Reply Pfab —p 138

Repair After Irrational Biliary Surgery—Walzel deals with the correction of mistakes made by surgeons in the treatment of disease of the gallbladder and biliary passages A cicatricial stenosis of the common bile duct has a very poor prognosis Adhesions overlooked gallstones and neurogenous stasis are better suitable for relaparotomy

Tests for Blood Transfusion—Metzler's patient, with grave anemia due to a gastric ulcer was given a transfusion with 500 cc of blood Both the patient and the *donor belonged to group O (I Jansky)* In spite of this the patient became unconscious during the transfusion Another transfusion made twelve days later, killed the patient

Klinische Wochenschrift, Berlin

5 585 632 (April 2) 1926

Angina Pectoris F Magnus-Alsleben —p 585
*"Organic" Iron Preparations W Heubner —p 588
*Coefficient of Cortex C v Economo —p 593
*Psychiatry and Habitus K Kolle —p 595
*Serology of a Pneumococcus F Berger and R Engelmann —p 599
Starvation and Alkali Reserve I Walinski —p 600
Static Insufficiency of the Skeleton H Maass —p 602
"Vitamins of Human Milk" A Frank —p 605
*Treatment of Multiple Sclerosis W Sauer —p 606
*Peptidases in Fever H Pfeiffer and E Standenath —p 606
Irritation in Seizure E A Spiegel and T Falkiewicz —p 606
Diaphragmatic Hernia L Reich —p 607
Infectious Skin Epitheliomas H Martenstein —p 608 Cen
Occupational Poisonings H Zangger —p 612
*Meningeal Affections J Schlesinger —p 631
*Treatment of Lancinating Pains O Stein —p 631

"Organic" Iron Preparations—Heubner finds that it is immaterial what admixture is added to the iron oxide in its use as an 'organic' preparation of iron The saccharate is cheap and makes combinations with proteins superfluous The question of bivalent or trivalent iron is more important The resorption of the former is better than of the colloidal preparations

The Cortex Coefficient—Economo estimates the number of cells in the human cerebral cortex at 14 billions Eight billions of them are large cells and six, smaller ones. The total weight of these cells is only about 21.5 Gm. and their volume 20.78 cc. The weight of the cortex is 581.3 Gm., the volume, 560 cc. The rest of the cortex consists of the gray matter. The ratio of the weight of the gray matter to the weight of the cells in man is 26. He believes that it is a good index of the organization of the cortex. Lower animals have a lower index (larger proportion of cells).

Psychiatry and Habitus.—Kolle is quite skeptical with regard to Kretschmer's somatic types. The pyknic habitus in cyclic psychoses is due chiefly to the fact that about four fifths of these patients are older, and the habitus simply corresponds to the age. Subjective ratings play an enormous rôle. Two investigators taught in the same school find a divergent percentage of types in a material of the same origin.

Serology of a Pneumococcus.—Berger and Engelmann changed a pneumococcus of group III into a strain of group II.

Peptidases in Fever.—Pfeiffer and Standenath test the degree of splitting of glycyltryptophan by the serum. A fever puncture in a rabbit did not increase the titer. Administration of tetrahydro-beta-naphthylamine and injections of a typhoid vaccine killed by heat gave also negative results. Addition of phenol as well as destruction of the cells caused by other means—such as vaccinia and colon infections—increased the titer.

Meningeal Affections.—Schlesinger observed, as one of the first signs of meningitis in infants and small children, a dissociation between the movements of the head and of the eyes. The children turn the head first, and the eyes follow only slowly.

Treatment of Lancinating Pains.—Stein had success in twenty-eight of thirty-two cases of lancinating pains in tabes with intravenous injections of 10 cc. of a 40 per cent solution of methenamine. Irritation of the bladder was noted in some of the patients thus treated. It disappeared after administration of 1 mg. of atropine sulphate.

Medizinische Klinik, Berlin

22: 515-558 (April 1) 1926

Brain Surgery. F. Krause.—p. 515.
Fifty Years of Goiter Surgery. C. Garrè.—p. 518.
Fifty Years of Abdominal Surgery. H. Kümmell.—p. 520.
Surgery of the Lungs. A. W. Meyer.—p. 525.
*Paralysis of the Intestine. P. Rosenstein and H. Köhler.—p. 530.
Aseptic Cystoscopy. V. Blum.—p. 533.
*Endocarditis Lenta. F. Heilborn.—p. 535.
Basal Gangrene of the Appendix. F. Orthner.—p. 537.
Research on Viruses. R. Kraus.—p. 538.
Skull Injury and Brain Tumor. A. Wilde.—p. 540.
"Epituberculous" Infiltrate. W. Schmitt.—p. 543.
French Neurology. M. Seige.—p. 546.
Legalized Abortion in Russia. A. Geuss.—p. 555.

Paralysis of the Intestine Treated with Injections in the Celiac Ganglion.—Rosenstein obtained movements of the intestines in cases of complete paralysis of the bowel (from peritonitis) by injecting 3 mg. of nicotine, in 30 cc. of water, around the celiac ganglion. He used Kappis' paravertebral technic. The injection does not necessarily cure the patient, who may die from sepsis. Köhler reports on experiments on animals. Nicotine was the only drug which proved effectual and harmless.

Endocarditis Lenta.—Heilborn finds that splenectomy may help in cases of recurring ulcerative endocarditis, if the clinical symptoms point to a marked participation of the spleen.

Münchener medizinische Wochenschrift, Munich

73: 555-594 (April 2) 1926

A Physician's Thoughts on Medicine. A. Bier.—p. 555.
*Laryngoplasty. V. Schmieden.—p. 558.
Acetylene Anesthesia. E. Seifert.—p. 559.
Parasternal Protuberance. F. Hamburger.—p. 561.
Venereal Granuloma. M. N. Thierfelder and M. Thierfelder-Thillot.—p. 561.
*Treatment of Furuncles. K. Junkermann.—p. 563.
Bronchial Carcinoma. W. Nonnenbruch.—p. 564.
Knock-Knees. K. Port.—p. 565.
Growth and Goiters. Pflüger.—p. 566.
Treatment of Paraphimosis. Witzenhausen.—p. 568.
Diffuse Peritonitis. H. Heufelder.—p. 568.
Treatment of Wounds. Berkenbusch.—p. 570.
"Status Asthenicus Adiposus." H. Hueck.—p. 572.
Treatment of Abortion. H. Sellheim.—p. 573. C'cn.
Overburdening by the School. v. Brunn.—p. 577.

Laryngoplasty.—Schmieden recommends Payr's plastic operation on the larynx in cases of paralysis of the inferior laryngeal nerve.

Treatment of Furuncles.—Junkermann regards surgery in carbuncles and furuncles (except in simple fluctuation) as criminal. He applies mercurial ointment in a thick layer on a piece of linen, or, if stomatitis or nephritis sets in, 40 per cent sulphonated bitumen, N. F., in hydrous wool fat.

73: 595-638 (April 9) 1926

The Respiration Center and Morphine. R. Gottlieb.—p. 595.
*Indigestion. W. Weitz and W. Vollers.—p. 598.
*Bronchial Asthma. W. Storm van Leeuwen.—p. 599.
Leukocyte Counts. O Prym.—p. 603.
Blood Groups in Cologne. E. Wiechmann and H. Paal.—p. 606.
**Diagnostic Culture in Tuberculosis. J. Hohn.—p. 609.*
Leptospirilloses. W. H. Hoffmann.—p. 611.
Starting Point of Systole. F. Schellong.—p. 614.
Iodized Oil in Pyelography. A. Sigl.—p. 617.
Technic of Percussion. J. Schwarzmann.—p. 618.
Kidney Diseases. C. R. Schlayer.—p. 622.
The "Attending Physician" and Occupational Diseases. L. Reinheimer.—p. 624

Slight Stomach Disturbances.—Weitz and Vollers found more pronounced disturbance of the gastric motor function than of the secretion of the stomach in indigestion.

Bronchial Asthma.—Van Leeuwen divides asthma-inducing substances into two groups: the A allergens contained in the air, and the B, the others, occurring in houses. He had excellent results when keeping the patients of the group B *at least over night in small chambers with sterilized mat*tresses, and the air supplied through a tube ending about 10 meters above the roof of the building. With the A type of asthma, he chills the air. The condensed vapor contains most of the A allergens. After this, he heats the air and supplies it to the patients.

Diagnostic Culture in Tuberculosis.—Hohn concludes that the problem of the diagnostic cultivation of tubercle bacilli is solved by the Löwenstein-Sumiyoshi method.

Wiener klinische Wochenschrift, Vienna

39: 377-408 (April 1) 1926

*Chagas' Disease and Goiter. R. Kraus—p. 378.
"Iodine Exophthalmic Goiter." A. Schimak.—p. 382.
*Drugs with Hidden Iodine. L. Kofler.—p. 386.
Chromodiagnosis of the Liver Plus Cholecystography. F. Faltitschek and H. Krasso—p. 387.
"Surgically Incurable" Ulcer. F. Mandl.—p. 391.
Roentgen Study of Uterus and Tubes. R. Joachimovits.—p. 393.
Experimental Pathology. A. Fraenkel.—p. 394.
Treatment of Hay Fever. F. Vollbracht.—p. 395.
Lupus Erythematodes. S. Ehrmann. Supplement.—p. 1-24.

Chagas' Disease and Goiter.—Kraus finds that it has not been proven that the South American trypanosomiasis causes the goiter and myxedema. There are many regions in South America with endemic goiter (75 per cent; 30 per cent are cretins), and although the triatomas found there contain trypanosomas, no Chagas' disease is observed there.

Drugs with Hidden Iodine.—Kofler found iodine in several *preparations* sold as "pure nonpoisonous vegetable compounds."

39: 409-436 (April 8) 1926

The Mucosa in Dermatoses. S. R. Brünauer.—p. 409. C'td.
Pathology of Therapeutic Malaria. R. Adelheim.—p. 412.
*Iodine in Vasomotor Rhinitis. H. Sternberg and M. Sugar.—p. 416.
*Intracavernous Injections. H. Adler.—p. 417.
The Vienna Manual Method. B. Beer.—p. 418.
Fermentation Tube. A. Luger and N. Kovács.—p. 420.
Salts of Acetylsalicylic Acid. O. Nemetz.—p. 422.
"Diabetic Glycosuria." L. Dünner and M. Mecklenburg.—p. 422.
Reply. H. Schur and F. Kornfeld.—p. 423.
Sanatoriums and Tuberculosis. E. Ladeck.—p. 423.
Surgical Indications for Gastric and Duodenal Ulcers. J. Schnitzler. Supplement.—pp. 1-24.

Iodine in Vasomotor Rhinitis.—Sternberg and Sugar report good results with from two to four subcutaneous injections of 1 cc. of a 5 per cent solution of sodium iodide. Only the solutions containing traces of free iodine were active.

Intracavernous Injections.—Adler injects dextrose, arsphenamine or calcium chloride into the cavernous spaces of the lower turbinal when the skin veins are not palpable.

Zeitschrift fur Krebsforschung, Berlin

23: 161 240 (April 10) 1926

Experimental Uterine Cancroid Teutschlaender—p 161
*Bacterium Tumefaciens Teutschlaender and Kronenberger—p 177
*Mitoses in Tar Cancer Teutschlaender and H Schuster—p 183
The Mouse Molluscoid Tumor Teutschlaender—p 209
*Metastasis of Cancer H Metzger—p 229

Experimental Uterine Cancroid—Teutschlaender induced cancroid of the uterus in a rat by intravaginal injections of tar

Bacterium Tumefaciens—Teutschlaender and Kronenberger failed in their attempts to induce cancer by injection of tumefaciens cultures with addition of various irritating substances

Mitoses in Tar Cancer—Teutschlaender and Schuster found no atypical mitoses in the first three stages of formation of tar cancer Only in one part of the fully developed cancer could abnormal mitoses be detected

Metastasis of Cancer—Metzger describes a diffuse lymphatic infiltration of the uterus by a metastasis from a carcinoma of the breast Only an intramural myoma remained free—probably because its lymphatic vessels were only little developed

Zeitschrift fur Tuberkulose, Leipzig

44 353 432 (March) 1926

Sanocrysin Treatment W Zinn—p 353
Cytology of the Sputum R Engelsmann—p 373
*Diagnostic Cultures in Tuberculosis R Meller—p 387

Diagnostic Cultures in Tuberculosis—Meller compared various methods for detection of tubercle bacilli in the urine, sputum and pus The Lowenstein Sumiyoshi culture method is superior to examination of slides and at least equal to experimental inoculation The material is mixed with three parts of 15 per cent sulphuric acid, and is centrifugated This whole procedure must not last more than fifteen minutes After this the sediment is washed three times with sterile physiologic solution of sodium chloride, and glycerol potato tubes are inoculated with it, after which they are sealed

Zeitschrift fur Urologie, Leipzig

20 161 240, 1926

Atony of the Ureter J Gottlieb—p 161
Device to Control Enuresis B Mueller—p 165
Innervation of the Kidneys E Lehmann—p 167
Case of Male Genital Tuberculosis I Deutsch—p 177
Leukoplakia of Kidney Pelvis W Karo—p 208
Irradiation of Exposed Tuberculous Kidney Rave—p 216
Kinked Ureter Siedner—p 218
Ureter Stricture Schmutte—p 222
Stone in a Pseudodiverticulum Heckenbach—p 225
Tuberculosis of Kidney A Barros—p 228
Congenital Atrophy of the Kidney Stutzin and Libowitz—p 229

Zentralblatt fur Chirurgie, Leipzig

53: 833 896 (April 3) 1926

Treatment of Peritonitis W Korte—p 833
Diverticula of the Urethra V Schmieden—p 837
Surgery of Joints E Payr—p 842
Tumors of Lungs F Sauerbruch—p 852
*Synovitis of Knee A Lawen—p 857
Suture of Crucial Ligament G Perthes—p 866
Brain Tumors N Guleke—p 873
*Blunders and Dangers in Surgery E Hesse—p 880
Hemorrhage in Spite of Ligation of Lingual Arteries R Stich—p 882
*Blunders in Surgery of Hernias R Stich—p 884
Dangers of Nephrectomy in Paranephritis W v Gaza—p 886
*Blunders in Surgery G Perthes—p 887
Surgical Mishaps W A Oppel—p 889
Pseudarthrosis in Pregnancy H Tammann—p 891

Synovitis of Knee—Lawen deals with changes of the synovial membrane in the knee joint He extirpated the plica synovialis in nineteen cases

Blunders and Dangers in Surgery—Hesse introduces a new department of the *Zentralblatt*—devoted to surgical blunders and dangers The department will accept even anonymous communications, which will be edited by specialists

Blunders in Surgery of Hernias—Stich reports a few instances of blunders made in surgical treatment of hernias In one instance, a piece of the colon wall, 10-12 cm long was resected in a case of sliding hernia—having been included in the ligature thrown around the hernial sac—and, what is perhaps still worse, the physician had not inspected the resected portion The patient died from peritonitis Retroperitoneal reposition of the hernial contents can be avoided if the surgeon does not omit the correct forceps fixation of the posterior wall of the hernial sac, even if he thinks that he knows all about surgery of hernias The bladder may be injured, especially if the surgeon tries to make a deep suture

Blunders in Surgery.—Perthes recalls a case of fracture of the femur below the trochanter which had healed in a right angle with a resulting grave shortening He intended to make a wedge-shaped osteotomy The bone was so hard that chiseling was impossible He used the case to demonstrate the advantage of a new method (boring holes) before another distinguished surgeon who was visiting him The result was a pseudarthrosis, because the sclerotic bone was unable to produce another callus The correct method would have been to operate distad from the fracture in the healthy bone He believes that the presence of the visitor influenced him unfavorably Thiersch declared once that a good orator must feel a sovereign contempt for his public This applies also to a good surgeon

53: 899 976 (April 10) 1926

*Letter of Historical Interest—p 899

Letters of Historical Interest—This issue is entirely devoted to the reproduction of letters from prominent surgeons from the early days of the foundation of the German Surgical Society, fifty years ago

Zentralblatt fur Gynakologie, Leipzig

50: 833 976 (April 3) 1926

Fifty Years of the Zentralblatt fur Gynakologie W Stoeckel—p 833
Rectal Versus Vaginal Examination P Baumm—p 846
Carcinoma of the Uterus A Doderlein—p 847
Lack of Care or of Skill F Engelmann—p 850
*Chlorosis and Anemia of Pregnancy P Esch—p 857
Carcinoma of the Cervix L. Fraenkel—p 862
Duration of Pregnancy O v Franque—p 865
Drainage of Ureter After Operation for Vesicovaginal Fistula H Fuchs—p 868
*Retroflexion and Accident H Futh—p 871
Sign of Probable Pregnancy C J Gauss—p 875
Ovaries and Uter [illegible] rrhages M Henkel—p 888
Treatment [illegible] T Heynemann—p 893
*Bearing [illegible] the Parturient O Hoehne—p 897
Tuberc [illegible] ed Bladder R T v Jaschke—p 901
Prolap [illegible] ical Ureterocele F Kehrer—p 905
Coll [illegible] r Obstetric Hemorrhage F Kermauner—p 914
Mu [illegible] ecology A Mayer—p 916
T [illegible] in Gestation C Menge—p 921
Cl [illegible] in Gynecology E Opitz—p 928
I [illegible] ntation of Ovum O Pankow—p 932
[illegible] ning in Obstetrics K Reifferscheid—p 936
*Pfannenstiel s Transverse Incision O Sarwey—p 940
Backache R Schroder—p 947
The Biliary System in Pregnancy L Seitz—p 954
Unilocular Ovarian Cyst H Sellheim—p 957
Kielland Forceps M Walthard—p 961
Obesity and the Ovaries H Wintz—p 964
Fetal Sounds in First Stage of Labor Zangemeister—p 972

Rectal Versus Vaginal Examination—Baum investigated in 864 obstetric cases the questions, how often an interna examination is necessary and how often the rectal examination furnishes satisfactory information Internal examinatio was comparatively rarely needed—only in about 8 per cen of the cases In this group, rectal examination failed in 8 per cent—especially with placenta praevia and prolapse o the umbilical cord

Chlorosis and Anemia of Pregnancy.—Esch reports case of low color index and erythrocyte count occurring in pregnancy They differ from pernicious anemia of pregnancy

Retroflexion and Accident—Futh regards Raaflaub's sig of recent traumatic retroflexion of the uterus as valuable Both inguinal regions are tender spontaneously as well a on pressure

Sign of Probable Pregnancy.—Gauss published in 1920 modification of Hegar s sign The cervix presents in th early *months* of pregnancy an abnormal motility It may b easily pushed to either side without entailing a corresponding *movement* of the uterus He found the sign in 146 of 14 pregnancies (including one in the first and fifty-five in th second month). The two failures (both in the second month) were corrected ten days later. The phenomenon is comparatively rare outside of pregnancy.

Factors in the Bearing Down Efforts of the Parturient.—Hoehne concludes that the lengthwise stretching of the lower segment of the uterus and of the round and uterosacral ligaments provokes the reflex pressing by the woman in labor. It may be produced experimentally in the later stages of labor by pressure on the perineum by fingers introduced into the vagina, and in earlier stages by lifting up the uterus with both hands. Premature bearing down efforts may cause rupture of the cervix. They should be avoided before the os is completely dilated. Any premature pressing indicates some anomaly in the labor.

Pfannenstiel's Transverse Incision.—Sarwey concludes that Pfannenstiel's transverse incision of the aponeurosis has every advantage over longitudinal incisions in all obstetric and gynecologic laparotomies.

Zentralblatt für innere Medizin, Leipzig

47: 313-328 (April 3) 1926

**Theobromin and Test Diuresis. S. Litzner.—p. 313.*

Theobromine and Test Diuresis.—Litzner finds that theobromine sodium salicylate does not inhibit the water test diuresis. If a diuresis test is repeated on two consecutive days, the diuresis is always less on the second—whether the drug is administered or not. If the subject drinks plenty of water and eats salt on the first day, the diuresis is good on the second day.

47: *329-376 (April 10) 1926*

Percussion and Auscultation. P. Martini.—p. 329.
*Duodenal Treatment of Cholecystitis. E. Allard.—p. 336.
*Injection of Caffeine into the Cisterna. D. Kulenkampff.—p. 341.
*Blood Chemistry in Blood Diseases. E. Becher.—p. 350.
The Kidneys with Hypertrophy of the Prostate. G. Düttmann.—p. 352.
Roentgen Treatment of Mediastinal Tumors. F. Koch.—p. 353.
*Paravertebral Anesthesia. H. Havlicek.—p. 368.

Duodenal Treatment of Cholecystitis.—Allard advises surgical intervention in cholecystitis, gallstones, or occlusion of the common bile duct, only when duodenal treatment fails. He injects in the evening pituitary extract intramuscularly (to empty the gallbladder), and gives afterward 1 mg. of atropine with some cholagogue. On the next day, he introduces the duodenal tube, and provokes the reflex again. He follows this with injection of 100-300 cc. of a 15 per cent solution of magnesium sulphate. Profuse diarrhea follows, but some of the gallstones may appear in the stool after the second day. The injection brings on a colic which he mitigates by papaverine, atropine or scopolamine. He repeats the treatment every fourth to eighth day. He never witnessed any bad effects in his 200 cases thus treated in the last two and a half years. It is hardly necessary, he adds, to emphasize that empyema of the gallbladder is a contra-indication to this treatment.

Injection of Caffeine Into the Cisterna.—Kulenkampff made an Alexander-Adams operation under local anesthesia in a young woman. Thirty-six hours later she stopped breathing. Lobelia and artificial respiration did not seem to help much. An injection of 0.08 cc. of caffeine into the cisterna resuscitated her.

Blood Chemistry in Blood Diseases.—Becher found in pernicious anemia large amounts of phenol and of indican in the blood. Even free phenol may occur. The aminonitrogen is increased—because of the increase in erythrocytes—in polycythemia. The combined and free aminonitrogen is much increased in leukemia. It is localized in the leukocytes.

Paravertebral Anesthesia.—Havlicek describes the technic of paravertebral injections.

Gann, Tokio

19: 1-18 (March) 1926. Foreign Edition

*Production of Tumor Resistance by Fatty Acids. Nakahara.—p. 1.
Changes of Skin in Tarred Mice. M. Kashiwagi.—p. 4.
*Pityrol Sarcoma in Rabbit. Y. Kaneko et al.—p. 5.
*Tumors on Fish. K. Takahashi.—p. 5.
Combined *Tumors; Case of Sarcoma plus* Carcinoma. M. Koyama.—p. 9.
Mammary Fibro-Adenoma in White Rat. M. Koyama.—p. 9.
*Influence of Cancer on Endocrine Organs in Rats. Toriumi.—p. 10.
Glioplastic Sarcoma in the Fourth Ventricle. T. Fukuda.—p. 13.
*Tumors in Fish. E. Sagawa.—p. 14.
Curiegraphy. Intravenous Injection in Rabbits with Experimental Tumors of Serum Charged with Radium Emanations. K. Itchikawa.—p. 16.

Production of Tumor Resistance by Fatty Acids.—Nakahara's research was summarized in 1925 when published elsewhere (May 16, p. 1526).

Artificial Tumor from Injection of Pityrol.—Metastatic nodules were found in the lungs, kidney and spleen of the same structure as the primary fibromyxo-adenoma which had developed in the mammary gland of one of twelve rabbits injected subcutaneously with pityrol in olive oil, once or twice a month, for fifteen months.

Tumors in Fish.—Takahashi has collected 140 tumors in fishes, including practically all kinds of growths except myomas. Only one instance of a neuroma was found. Tumors containing guanin crystals—his "guanophoromas"—have never been found in warm-blooded animals. Sagawa describes a case of multiple fibromas on the skin of a gold fish, epitheliomas on others, and osteomas in other fishes. None of them seemed to be of parasitic origin.

The Endocrines with Rat Cancers.—Toriumi relates that all the endocrine glands and gonads showed retrogressive changes, but nothing specific for malignant disease.

Russkaia Klinika, Moscow

5: 183-341 (Feb.) 1926. Partial Index

Influence of Roentgen Rays on the Cell. Vail and Liberzon.—p. 183.
*Ulcerative Endocarditis. B. Egoroff.—p. 189.
The Duodenal Tube from Surgical Standpoint. S. Ternovsky.—p. 223.
Roentgen-Ray Diagnosis of Echinococcosis. A. Uspensky.—p. 244.

Pathogenesis of Septic Endocarditis.—Egoroff induced hemorrhagic infarction in the aortic valves of a sheep by injecting crushed blood clots into the jugular vein. It shows, he says, that there were capillaries in the valves, and that the embolus passed through the capillaries of the lung. While in this experiment the embolus caused merely infarction, it is probable that infarction from a bacillary embolus would induce an ulcerative endocarditis analogous to that in man. Septic endocarditis seldom occurs, because vessels in the valves are rare. Their presence is a sign of atavism, entailing the predisposition to ulcerative endocarditis. Development of old valvular lesions into septic endocarditis is due to formation of vessels in the valves, from the previous endocarditis. Mechanical injury of the valve tissue is not indispensable for production of endocarditis. Bacteremia alone does not cause endocarditis unless there are microscopic bacillary emboli in the blood. Only the ulcerative form presents a true infectious endocarditis. Other forms should be called endocardosis, since there is no inflammation of the valves; only changes of toxic origin.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 1037-1156 (March 13) 1926

*Acute Gangrene from Vascular Spasm. R. Finaly.—p. 1038.
Assimilation of Form and Fetalization. S. T. Bok.—p. 1045.
Segmentation of Frog Muscles. S. de Boer.—p. 1053.
*Source of Error in Sugar Tests. C. van Bemmel.—p. 1061.
Dreams of Rhythmic Movements. G. van Rijnberk.—p. 1062.
Fourth Case of Weil's Disease. J. Enneking.—p. 1063.
Gonococcal Process in Spermatic Cord. H. Boshouwers.—p. 1068.

Prolonged Vascular Spasm After Trauma.—Finaly reports three cases of acute gangrene after a bullet wound or contusion; in two it developed in nineteen and twenty-nine hours. The disturbances spread also proximad from the site of the trauma, and the limb was extremely tender above and below, the tenderness stopping proximad at a circular limit. The disturbances subsided spontaneously in one case after removal of the bullet which had bruised the femoral artery. The continuous spasm of the vessels seemed to be a kind of traumatic neurosis in patients under 20.

Error in Urine Test for Sugar.—Van Bemmel found in 5 per cent of a recent hundred subjects that while a positive response was obtained with the Nylander test, on shaking the test tube the sediment dissolved, the reaction thus becoming negative. The Fehling test had been constantly negative in these cases. He warns that this false positive reaction might prove misleading in patients known to have had glycosuria in the past. Shaking the test tube (1 part Nylander reagent to 10 parts urine and boiling for three minutes) may spare such patients unnecessary diet restrictions.

1: 1261-1368 (March 27) 1926

*Plastic Operation for Dislocation of Shoulder. E. Hustinx.—p. 1262.
*Etiology of Cancer. W. E. Gye.—p. 1268.
A Serologically Different Typhoid Bacillus. Mertens.—p. 1282.
Treatment of Favus with Mineral Oil. M. D. Horst.—p. 1286.
Kidney Calculi in Two Children. S. Simons.—p. 1290.
Elephantiasis of the Vulva. J. A. van Dongen.—p. 1293.*

Habitual Dislocation of the Shoulder.—Hustinx gives illustrations of a case in which he operated years ago. They show the absolute restoration of function after correction of paralysis of the deltoid by suturing a flap from the pectoralis to the scapula.

Etiology of Cancer.—Gye brings down to date his arguments for the assumption of an agent from without which serves as the link that connects such widely different tumors as the Rous sarcoma and tar cancer.

Finska Läkaresällskapets Handlingar, Helsingfors

68: 87-183 (Feb.) 1926

*Hereditary Pseudohemophilia. E. A. v. Willebrand.—p. 87.
*Syphilis and the Kidneys. T. W. Tallqvist.—p. 113.
Congenital Intestinal Cyst; Two Cases. A. Grasbeck.—p. 130.
Erroneous Therapeutic Principles. A. Clopatt.—p. 142.
*Determination of Size of Erythrocytes. E. Gustavson.—p. 152.

Hereditary Pseudohemophilia.—Willebrand describes a family with not less than twenty-three bleeders among the sixty-six members in four generations. The coagulation time was normal, but the bleeding time was extremely long in the grave cases, and the Rumpel-Leede phenomenon was pronounced. The clinical picture resembled that of Weil's disease although certain features differed, suggesting some functional disturbance in the thrombocytes plus a general lesion of the vessel walls. The thrombocytes numbered from 55,000 to 450,000. The eosinophils ranged from 1 to 14 per cent, the lymphocytes from 25.3 to 61.3 per cent, and the neutrophils from 35 to 65.4 per cent. He queries whether this may not represent a new nosologic type of hemorrhagic diathesis. The graver forms were in women and proved fatal in five. None of the male members died from this cause. Transmission seemed to be in the female line. Nineteen cases on record are summarized.

Syphilis and the Kidneys.—Tallqvist found no evidence in twenty-three cases of kidney disease in syphilitics that syphilis could be incriminated for nephritic changes in the kidneys. In nine cases the nephrosclerosis was of a severe progressive type, and the syphilis averaged twenty-seven years' duration. In two cases acute syphilitic nephrosis developed in recent infection; one recovered completely under specific treatment, and the other was much improved but failed to complete the course. Ordinary dietetic-hygienic measures in these cases had had very slight effect. In six chronic nephrosis cases, the syphilis seemed to have been the main factor, and all improved more or less under specific treatment according to the date of the primary infection. Exceptional caution is required in treating syphilis involving the kidneys. The doses should be small to begin with, not over 0.15 Gm. of neoarsphenamine, and the urine frequently supervised.

Size of the Erythrocytes.—Gustavson reproduces the blood findings as estimated by Löwy's method (described in these columns, June 20, 1925, p. 1969). This method may aid the practitioner in detection of pernicious anemia, for example, in an early stage. Diabetic blood takes stains a little differently, and gives a better contrast than normal blood in applying the Löwy method, as Taubmann recently announced.

68: 185-303 (March) 1926

*Superficial Disease of the Cerebellum. F. Leiri.—p. 185.
The Water Metabolism as Influenced by Different Variables. D. Rancken.
—p. 203.
Definition of the Psychic Constitution. L. Ringbom.—p. 231.
Chemotherapy in Pulmonary Tuberculosis. J. Grönberg.—p. 246.

Superficial Lesions in the Cerebellum.—Leiri reports two cases of suppuration in the cerebellum of otogenous origin. He emphasizes the diagnostic importance of the premature arrest of the movement in the finger-nose test, the finger stopping 10 cm. short of the goal. This phenomenon he calls the "brake" sign of a shallow cerebellar lesion. Other signs are a positive piano-playing test and the short-step gait.

Hospitalstidende, Copenhagen

69: 121-148 (Feb. 11) 1926

Nystagmus with Otogenous Abscess in Cerebellum. R. Lund.—p. 121.
*Peritonitis from Autoinjection in the Uterus. E. Petersen.—p. 142.

Peritonitis After Intra-Uterine Injection.—The fatal peritonitis developed after auto-injection of soapy water into the nonpregnant uterus of a multipara. The sale of the "mothers' syringe" (long tip that can be used for intra-uterine injection) has been recently forbidden in Denmark.

69: 149-168 (Feb. 18) 1926

*Subarachnoidal Hemorrhage. W. Munck.—p. 149.

Subarachnoidal Hemorrhage.—Munck tabulates under eleven headings nine cases of sudden death from isolated subarachnoid hemorrhage (only two in women) without trauma or known disease. The ages ranged from 14 to 62. The source of the bleeding could not be discovered; the spinal fluid was blood-stained and under high pressure. Signs of external injury and history of violence must be sought before assuming a traumatic origin.

69: 169-196 (Feb. 25) 1926

*Operative Treatment of Incontinence of Urine. Gammeltoft.—p. 169.
Operative Treatment of Ozena. G. V. T. Borries.—p. 184.

Surgical Treatment of Incontinence of Urine.—Gammeltoft reports the successful application of the Goebel-Stoeckel operation in a multipara for incontinence after operations for cystocele, etc. The pyramidalis or rectus muscle is used to make a ring around the urethra.

Ugeskrift for Læger, Copenhagen

88: 261-286 (March 18) 1926

*Metal Salts Therapy. L. E. Walbum.—p. 261. C'en, p. 298.
*Research on "New Glucose." C. Lundsgaard et al.—p. 272.
*The Insulin Complement. C. Lundsgaard et al.—p. 273.
False Sprue in a Mother and Daughter. G. Schroll.—p. 276.
Immunization with Measles Convalescents' Serum. Mathiesen.—p. 277.
The Dose in Sanocrysin Treatment. T. Begtrup-Hansen.—p. 278.
To Improve Tuberculosis Statistics. Kjer-Petersen.—p. 282.

Metal Salts Therapy.—Walbum's extensive research in this line with fifty different metals has confirmed the principle that the dose must be such as to stimulate production of antibodies while too small to stimulate the growth of bacteria. Combining with a vaccine the optimal dose of one of the few metals which displayed a protective and curative action, he was able to protect guinea-pigs against infection with tubercle bacilli and cure the established disease. The combination of vaccine and metal salt also protected mice against ratin infection, and protected tuberculous guinea-pigs against tuberculin shock. Manganese and beryllium proved most effectual in his experience. He assumes that antibody production is of enzyme nature, and thus can probably be influenced by catalytic phenomena.

Neoglucose.—This report states that there does not seem to be any production of the "new" form of glucose during fermentation of alpha and beta glucose.

The Insulin Complement.—Lundsgaard and his co-workers have found in their further research on the element in muscle tissue which, associated with insulin, transforms alpha and beta glucose into neoglucose, that it is not identical with Meyerhof's muscular coferment. It cannot be obtained from muscle tissue by water extraction, and it does not stand heating to 70 C. for two minutes. As its presence cannot be demonstrated in the juice obtained by pressure from muscle tissue, the insulin complement must be bound to the intact cell structure. It is found in both cold-blooded and warm-blooded animals.

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DIAGNOSIS IN ORTHOPEDIC SURGERY *

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The orthopedic surgeon of today is well trained in the application of therapeutic measures to prevent and relieve deformity, but he is often faced with problems which have not been properly solved or which have been solved only after considerable injury has been done to important structures and he is expected to do the impossible in the restoration of function. Some of the reasons for this are wrong diagnosis, late diagnosis, snap diagnosis or the diagnosis of hysteria.

Musser[1] says, "Success in treatment requires both accuracy and completeness in diagnosis," and "Partial knowledge of a case differs in degree only from ignorance." To my mind these two sayings are as true today as they were twenty-five years ago, and they should make us pause and ask ourselves whether or not we are endeavoring to do everything in our power to locate and discover the trouble with many of our patients in order that they may get the benefit of the best modern knowledge.

Most weaknesses in solving problems in diagnosis are due to:

1. Bad elementary training.
2. Insufficient knowledge of the fundamental subjects in medicine.
3. Lack of proper hospital training.
4. Incomplete physical examinations.
5. Failure to make a thorough search for the cause of the ailment.
6. Premature selection of a specialty.
7. Dependence on the roentgen ray alone.

1. Bad elementary training begins with the child's early education, and the results apply not only to medicine but also to any other occupation that the person may select. Those of us who come in contact with medical students realize early that there are two outstanding things in which they appear to be deficient: First, they lack the faculty of making accurate observations, and, second, they lack the ability to reason or think out their problems in a straight and logical manner; on the other hand, their memories for a short period of time are usually good. It is rather late, when a student enters on a professional career, to expect his teachers to train him to study, observe and reason if he has not been taught to do so before. When he arrives at the clinical part of his course he is more or less deficient in those basic fundamentals which are so essential in making a diagnosis; i. e., the power to observe and reason.

2. Making an accurate diagnosis of many orthopedic conditions is based on a sound knowledge of anatomy, physiology and pathology. In fact, nearly all orthopedic conditions are due to pathologic disturbances of structure and function. How many third and fourth year medical students are there who can name, locate and give the function of the principal muscles which control the ankle or hip joints? Is it not possible to obtain a closer association of these subjects and the clinical subjects in the medical schools?

3. Does the average intern in the average hospital receive any systematic training, from members of the visiting staff, in the art of examination and diagnosis? Is it not a part of our duty to see that the young men who come to us for help and inspiration are properly trained?

4. Most orthopedic problems are individual; therefore, each patient should be considered as a health unit and examined accordingly. Too many are satisfied with making an examination of the local condition when a more searching one would have revealed, perhaps, the key to the local disease. If we are not competent to do all that a complete examination involves, we should at least have sufficient knowledge so that the patient may be referred to some one who is capable of doing what is necessary.

5. Many diseases are easily diagnosed, but successful treatment often depends on finding a cause. Arthritis is an example. Of course, there are a great many diseases whose causes are unknown and can be determined only by persistent research.

6. Premature selection of a specialty is not uncommon among medical students. Many of them, early in their medical course, determine on the special line they wish to pursue, and, having made their selection, the inclination must be for them to neglect important courses, not realizing that every specialty in medicine may often be interlocked with some or all of the others. The result of this must be to produce a man with very narrow limitations in his line because much that is fundamental has been cast aside. How can one educated in this way become a good diagnostician?

7. Depending on the roentgen ray to make a diagnosis is a fault in a good many clinics and has been the cause of a good deal of harm. In the first place, pathologic changes may be present for many days or even weeks before the roentgen ray will reveal them. In the second place, there are so many lesions that give similar appearances in the roentgenogram that a proper diagnostic interpretation cannot be made. The r

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* Chairman's address, read before the Section on Orthopedic Surgery at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Musser: Medical Diagnosis, ed. 2.

gen ray is a valuable aid in diagnosis; so is the clinical thermometer; but no one would think of depending on this for a diagnosis.

Hysteria as a diagnosis is a very dangerous one to make, and the burden of proof should fall on the one who makes it. Many patients have this diagnosis thrust on them as a result of a poor examination or an improper assembling of pathologic data. The following is a case in point:

M. B., a girl, aged 16, seen in September, 1925, had had a difficult birth with instruments, and began walking at the age of 2 years. It was noticed that she had difficulty in using the left arm and leg. She did fairly well up to the age of 13, when she fell, striking her head; she was not unconscious, but there were contusions on the head. The right side became affected after the fall, and the left side was worse than formerly. There was some disturbance of sensation and some loss of control of the bladder and rectum. Sensation had gradually improved, and control of the bladder and rectum had returned. Examination showed a quadriplegia more marked on the right side, bilateral equinus, and some contracture of the shoulders and wrists. There were definite sensory disturbances in the legs. The eye grounds and eye reflexes were normal, the abdominal reflexes absent, all tendon reflexes increased, bilateral Babinski and ankle clonus present. Roentgen-ray examination showed an old fracture of the odontoid process, with a slight backward displacement of the first cervical vertebra. Combined puncture showed no block in the cerebrospinal canal. The basal metabolism was — 41 per cent. There was normal mentality for the age of 16, but the patient's size was that of a child of 9. The roentgen-ray report was, old injury of the cervical spine. The clinical diagnosis was paralysis resulting from an old injury to the cervical spine. The admitting diagnosis was hysteria.

Making a snap diagnosis is an error into which we may fall, and is oftener wrong than right. It is made usually after a very superficial examination or none at all. The most to be said for it is that it is dangerous and not fair to the patient.

Inability to make a diagnosis may be due to absence of localizing symptoms, an atypical cause of a disease, or lack of knowledge of the nature of the disease.

Late diagnosis is often dependent on a lack of scientific knowledge, improper preparation of a case, insufficient data, inability to assemble facts, lack of cooperation by the patient, or carrying out expectant methods too long before reviewing developing signs and symptoms. A diagnosis of joint tuberculosis is made quite often, on symptoms and a few signs, and the patient is so treated over a long period because some one has said that in obscure joint affections a guess on tuberculosis would be right 80 per cent of the time. Are we justified in treating the other 20 per cent as tuberculosis?

Early diagnosis should be our aim, and everything should be done to convince the patient that he will be spared pain, deformity and long drawn out treatment if he will cooperate with us.

There are four diseases which are often diagnosed late and which supply us with more cripples than all the other orthopedic conditions combined. They are acute osteomyelitis, acute poliomyelitis, bone and joint tuberculosis, and chronic arthritis.

Acute osteomyelitis is usually diagnosed as "acute rheumatism" or acute lymphangitis, and is allowed to go on until the patient becomes seriously ill and great bone destruction takes place. The diagnosis must be made on the history, the general and acute local symptoms present, which are out of all proportion to the extent of the lesion, the white blood count and loss of function. Roentgen-ray findings are of no value.

Poliomyelitis usually is seen late by the orthopedic surgeon; but since the deformities caused by this disease may be disabling, we as a group ought to be interested in putting out propaganda for diagnosis in the preparalytic stage, because in most cases this can be made. Pathologically, the meninges are the tissues that are primarily invaded, and the early signs are mental irritability, stiffness of the neck, and headache. These, when associated with signs of constitutional disturbance, should lead one to do a lumbar puncture. Lumbar puncture not only confirms the diagnosis but probably has a therapeutic value. The following case is illustrative of this point:

E. L., Sept. 7, 1925, complained of severe headache, fever, and soreness of the legs, of fifteen hours' duration. The temperature was 102; pulse, 100. General examination was negative except for a slight tenderness of the lower extremities, a little stiffness of the neck, photophobia, and a questionable Kernig sign. The knee jerks were hyperactive. Lumbar puncture showed the spinal fluid under considerable pressure, a cell count of 600, and no organisms. The next morning the temperature had dropped, and the headache had nearly gone. There was a slight rise in the afternoon temperature, but no more headache. The diagnosis was poliomyelitis. No paralysis developed.

The problem of arthritis has not been solved, but the percentage of cases relieved at the present time is a great deal higher than it was ten years ago. We should have no sympathy for those who place this disease in the large group of the incurable without making any effort to attempt a cure. Too often are the prodromal signs and symptoms ignored or treated with a few doses of acetylsalicylic acid when active measures will check them or even result in a cure. Patients who complain of soreness in their muscles or slight early morning stiffness in a few joints should not be put off with reassuring advice but should at once be shown the urgent necessity of a thorough and complete examination in order to locate the source of their troubles. Since the beginning of the theory of focal infections, many patients with arthritis have been cured; but our examination should not stop with infected teeth and tonsils. The examination should include the metabolism rate, teeth, tonsils, sinuses, genito-urinary tract, throat, ears and chest, and a great deal of attention should be paid to the gastro-intestinal tract. Barium meals may be necessary, an examination of the stools should always be made, and we shall be surprised to find how many of these arthritic patients have a mild, low grade constipation which, when properly treated, often results in a disappearance of arthritic symptoms.

J. F., seen in October, 1923, had had slight discomfort in both knees for one year and had an area of tenderness over the medial aspect of both knees. The knees had never swelled. The patient had a sensation of stiffness in the ankles, elbows and fingers at times in the morning. Examination of the knees showed nothing abnormal except in the infrapatellar fat pads, which were thicker than normal. All other joints appeared to be normal. The abdomen was low and prominent. A general medical examination was advised. This was not done until January, 1924, and revealed nothing abnormal except marked constipation. At that time there was considerable pain and swelling in both wrists, the tendons and joints being involved. There was pain in both elbows, which were sensitive on extreme extension. The teeth and tonsils were normal. In April, pain and swelling developed in the ankle joints, shoulders, neck and knees. The arthritis was completely relieved by a low carbohydrate diet, oil cathartics, intestinal massage and irrigations.

If this patient had cooperated during the early part of her attack and vigorous measures had been pursued, she would no doubt have saved many months of treatment and disability.

Bone and joint tuberculosis can be diagnosed early in a very high percentage of cases. Many joint conditions are diagnosed tuberculous, and are so treated over a long period. Such cases are often presented at clinics as cures, but when some one present wishes to know how the diagnosis was made, an embarrassing moment ensues if we are honest.

It has long been taught that positive proof of tuberculosis is made only when pus or fluid obtained from the affected area shows the tubercle bacillus, or material obtained shows under the microscope a lesion characteristic of tuberculosis, or suspected material injected into a guinea-pig produces tuberculous lesions. When joint tuberculosis is suspected, a thorough history should be taken and an examination made to determine whether or not there is a primary focus, it being remembered that tuberculosis is primarily a disease of the lymphatic system. Such an examination should include a roentgen-ray examination of the chest, a tuberculin intradermal test, and also a focal tuberculin test; roentgenograms of the joints should be taken, and when the evidence is not sufficient, a biopsy should be done. In doing a biopsy a generous amount of pathologic tissue must be removed from the affected area, sectioned very carefully, and many sections should be searched for the presence of tubercles. Some of this tissue should be thoroughly macerated and injected into the subcutaneous tissue of the thighs of two guinea-pigs (one pig may die before tuberculosis develops). This method will diagnose very early a great many doubtful cases and is preferable to expectant methods which must necessarily cover long periods of time and often cause considerable injury to tissues as a result of long immobilization. If the lesion is tuberculous the joint may be treated by heliotherapy with an earlier resumption of function or in adults an excision or fusion may be done.

J. E. S., aged 48, seen in May, 1919, had had trouble with the left knee for fifteen years. Six years before examination a cast had been worn for four months, and the patient had never been able to walk without a cane since that time. Examination showed a very tender knee permanently flexed at 45 degrees with moderate swelling and muscle spasm, and no motion present. Roentgen-ray examination was negative. The patient was treated in a traction knee splint with considerable relief for four years. Roentgenograms taken at intervals were always negative. The patient reported in October, 1923, that for the past few months the symptoms had increased and become more acute The patient consented to have the knee operated on. October 17, 1923, the knee joint was opened by a U-shaped incision. The capsule was dense, thick and fibrous; fibrous adhesions were present throughout the joint. These adhesions were broken up, and a small tuberculous cavity containing tuberculous pus was found in the center of the lateral condyle of the femur. A formal excision was then done. The patient made an excellent recovery and has remained well ever since.

If that knee had been treated by modern methods, the joint would have been explored, an early diagnosis made, and years of suffering and disability would have been prevented.

My final plea is for better medical education, more progress in general medical teaching, more complete physical and chemical examinations, and an endeavor on our part to make our diagnosis as early in the course of disease as possible.

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TYPES OF NEUROSYPHILIS IN RELATION TO TREATMENT*

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It is a well established fact that syphilis of the nervous system varies in the widest possible manner in its amenability to treatment. At one extreme we have those cases of neurosyphilis in which the spinal fluid becomes completely and permanently negative after a few intravenous injections of arsphenamine, and sometimes even spontaneously without treatment; while at the other end of the scale stand those cases which prove intractable to all ordinary methods of antisyphilitic treatment, and which in general develop sooner or later into outspoken cases of tabes or general paralysis. Now it is not too much to say that some years ago—before the introduction of intraspinal therapy and its modifications in the form of intracisternal and intraventricular injections,[1] and especially tryparsamide [2] and the malaria treatment [3]—it was not of especial practical importance to discriminate between these two broadly divisible types of neurosyphilis; for the vast majority of cases of the completely refractory type were doomed from the outset, so that their nonrecognition could usually in no way prejudice their ultimate outcome, while the patients of the less intractable type, on the other hand, could in most instances be counted on to do well under routine (intravenous) antisyphilitic therapy. But the advent of new and more efficient methods of treatment would seem to place the matter in a rather different light. For, if advantage is to be taken of these newer methods, it becomes of the highest practical importance to identify at the outset those very cases of neurosyphilis which formerly resisted all therapeutic efforts of a less intensive character, but which can now be handled with some real degree of success by means of these more effective methods of treatment.

If it be granted that such a necessity as this has come into being, it only remains to consider the means of recognizing the cases of neurosyphilis for which ordinary treatment will probably prove useless. It is not here a question of the diagnosis of syphilis in a given patient, nor even of the diagnosis of neurosyphilis itself, for failure in either of these two respects does not come within our present purview; our problem deals only with the patient in whom syphilitic involvement of the nervous system is known to be present, the question being: What, then, is the proper treatment for that patient?

It might here be well to state that the subjoined remarks are made from a single restricted point of view—from the point of view, that is, of one who has had occasion of late to treat numerous cases of outspoken general paralysis in which the existence of neurosyphilis had previously been proved, but for which nothing had then been done that might have been successful in preventing the evolution of an asymptomatic case of neurosyphilis, or of an early case of general paralysis, into a fully developed example of that disease, as the cases presently to be cited will serve to illustrate.

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* From the New York State Psychiatric Institute, Ward's Island.

[1] Solomon H C. The Treatment of Neurosyphilis, Pennsylvania M J **25**: 236 (Jan) 1922

[2] Lorenz, W T.; Loevenhart, A S; Blackwenn, W. J, and Hodges, F J The Therapeutic Use of Tryparsamide in Neurosyphilis, J. A. M. A. **80**: 1497 (May 26) 1923. Stokes, J. H, and Wilhelm, L F. X: Tryparsamide in the Treatment of Neurosyphilis: A Study Based on Observation of One Hundred and Fifty Two Patients for Eighteen Months, Arch Dermat & Syph **11**: 579 (May) 1925

[3] Gerstmann, J.. Die Malariabehandlung der progressiven Paralyse, Vienna, 1925 Bunker, H A Jr, and Kirby, G. H: Treatment of *General Paralysis by Inoculation with Malaria: A First Report,* J. A. M A **84**: 563 (Feb. 21) 1925.

For the purposes of the purely practical discussion here in question, let us dispense in the first place with all attempts at distinguishing between the parenchymatous and the meningovascular forms of neurosyphilis; for these are terms based on the data of pathologic anatomy, and have no very immediate cogency from a clinical and therapeutic standpoint. It should be remembered in this connection, for example, that just as disturbance of the pupillary reaction to light, or indeed the Argyll Robertson pupil itself, may be present in any form of neurosyphilis, so likewise the symptoms presented by the patient often similarly fail to serve as a basis for distinguishing between meningovascular and parenchymatous involvement of the nervous system. For we do not know the pathologic condition that specifically lies back of the individual symptoms that these various patients present; we cannot prove a correlation between the symptoms and the structural changes present in the meninges and the nervous tissue. We can only say, as Dunlap[4] has carefully stated it, that a meningitis—differing in certain details, it is true, but similar in its essential characters—is common to both the meningovascular and the parenchymatous types of cases; and that this may perhaps be in part the reason why the symptoms themselves offer no criterion for clinical differentiation. In illustration of this may be mentioned the symptoms that I[5] recently enumerated as characterizing the earliest onset of general paralysis in a series of cases of that disease: hardly one of the symptoms there described but might equally well be observed in patients with a meningovascular rather than a parenchymatous form of neurosyphilis.

If the symptoms of the patient are often of little avail in making a differentiation that is based on histologic grounds, the same may be said of the spinal fluid findings, for these offer, in and of themselves, no very certain indication of the character of the neurosyphilis with which we are dealing. Speaking very generally, it may be said that a Wassermann reaction that is negative in 0.2 cc., and particularly in 0.5 cc., of spinal fluid tells fairly strongly against the paretic form of neurosyphilis, at least in cases previously untreated; but the converse is not necessarily true. Moreover, many cases of tabes, as is well known, may at some stage of the disease present a weakly positive or even a wholly negative Wassermann reaction in the spinal fluid. And it might be added that a colloidal gold curve of the nonparetic type speaks more strongly against a diagnosis of general paralysis, as Solomon[6] was among the first in this country to point out, than does a curve of the paretic type speak necessarily in favor of that form of neurosyphilis or against the presence of the meningovascular type of the disease; yet this rule, too, is not altogether without exceptions.

The clinical differentiation, then, between the meningovascular and parenchymatous forms of neurosyphilis not only often offers considerable difficulty, even to the point of being sometimes quite impossible during life, but, considered from the strictly practical standpoint of the proper treatment of the neurosyphilitic patient, is not needful and serves no end that cannot better be met by other means. For what I hope to make clear is that from this single therapeutic standpoint the nomenclature employed is unimportant in comparison with the necessity for controlling the treatment of the neurosyphilitic patient at all stages by repeated examination of the spinal fluid. In other words, it does not here much matter what nosological type of neurosyphilis—meningovascular or parenchymatous, mesodermal or ectodermal—the patient is suffering from, and what label we may elect to apply to it; what does matter is whether our treatment is proving efficient in the given case of neurosyphilis, regardless of its label, as indicated by a definite and progressive effect on the spinal fluid abnormality. Nor can this crucial point be determined without the repeated examination of the spinal fluid, as treatment proceeds, to which reference has just been made. Indeed, one might say that, in the treatment of the neurosyphilitic patient, a single spinal fluid examination is of about as much significance as a single temperature reading in an acute infection would be.

ILLUSTRATIVE CASES

In illustration of the necessity for such a procedure, and of what may happen when it is not carried out, may be cited briefly the following four cases:

Case 1.—There was a chancre in January, 1916, followed by secondaries, five injections of arsphenamine and six mercury treatments were given. The patient had headaches in April. Lumbar puncture yielded 700 cells. The Wassermann reaction was strongly positive. Nine arsphenamine treatments were given. In August, 1916, there were 180 cells, and the Wassermann reaction was strongly positive. Objectively, there was involvement of the second nerve bilaterally and eighth nerve unilaterally. Thereafter more than 150 arsphenamine injections [illegible] given intravenously. There were mental sy[illegible] August, 1923. The patient was committed in [illegible] with general paralysis.

[illegible] that was early found to have neurosyphilis, [illegible] might have been considered by the subsequently published criteria of Moore[7] to be of the parenchymatous type, especially in the light of the spinal findings still present on the occasion of the second lumbar punctur[illegible] even years later the patient did actually develop an [illegible]oubted case of general paralysis, which the rather large amount of routine intravenous medication he received had been powerless to avert. This would indicate that, even if, for the protection of the patient, a probably highly resistant form of neurosyphilis had not at the beginning been assumed to be present until proved otherwise, a third lumbar puncture done at the end of six months would have undoubtedly revealed the fact that the treatment employed, though effective against the symptoms, was having little or no influence on the spinal fluid findings. And this, by the way, is suggestive of how misleading and of little value symptomatic amelioration may be in the absence of concomitant improvement in the spinal fluid picture. Indeed, it has been our frequent observation that patients with fully developed general paralysis, even, may experience a temporary improvement and arrest of their symptoms under intravenous treatment with arsphenamine; but the latter exerts little or no influence on the spinal fluid abnormality in such cases, and in fact the symptomatic improvement is sooner or later succeeded by relapse and the subsequent commitment of the patient.

Case 2.—There was a chancre in September, 1917. The patient had a slight sore throat. Neo-arsphenamine, twelve treatments, and mercury, eight, were given. No further treatment was administered till December, 1922. At that time the patient presented somewhat sluggishly reacting pupils; diminished and unequal knee jerks; absent right ankle jerk, and absent abdominals. The patient was given neo-arsphenamine, ten treatments, from January to April, 1923. There were beginning mental symptoms from January, 1923, but grossly from January, 1924. Lumbar puncture in March, 1924, yielded 50 cells. The Wassermann reaction was strongly positive in 0.6 cc. and moderately positive in 0.4 and 0.2 cc. The gold curve was of the paretic type. The patient was committed, April 29, 1924, with general paralysis.

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[4] Dunlap, C. B.: Anatomical Borderline Between the So Called Syphilitic and Metasyphilitic Disorders of the Brain and Spinal Cord, Am. J. Insanity 69: 1045, 1913.

[5] Bunker, H. A., Jr.: Incipient General Paralysis: A Study of the Earliest Symptoms Presented by Seventy-Four Cases, Am. J. M. Sc., to be published.

[6] Solomon, H. C.; Koefod, H. O., and Welles, E. S.: Diagnostic Values of Lange's Gold Sol Test, Boston M. & S. J. 173: 956, 1915.

[7] Moore, J. E.: Studies in Asymptomatic Neurosyphilis, II. The Classification, Treatment and Prognosis of Early Asymptomatic Neurosyphilis, Bull. Johns Hopkins Hosp. 33: 231 (July) 1922.

In this case the diagnosis of neurosyphilis through the help of a spinal fluid examination was not made until fifteen months after the discovery of highly suggestive neurologic signs in a known syphilitic patient, and one year after completing a course of ten intravenous injections of neo-arsphenamine. When treatment was then resumed, it was still intravenous only and was shortly interrupted because the patient was then almost on the verge of commitment.

Case 3.—The patient had a chancre in 1908. Two years' treatment with mercury was given. In 1919, twelve treatments with arsphenamine were given. In September, 1922, the pupils were markedly unequal, and the spinal fluid showed a high cell count. The Wassermann reaction was strongly positive, and there was a paretic type of gold curve. Thereafter till November, 1923, eight intraspinal injections of neo-arsphenaminized serum were given. There was improvement in weight and in general well being, "but there was never any change in the spinal fluid serology." There was a slight but rather definite personality change in June, 1923. The patient abandoned treatment in November, 1923, but reappeared in March, 1924, with marked loss of weight. The patient refused intraspinal treatment, but took sulpharsphenamine twice weekly until May, 1924, with physical improvement. There were definite mental symptoms in June and July, 1924. The patient was committed, Aug. 26, 1924, with general paralysis.

This case, well handled so far as the patient made it possible, carries the argument one step further. It is to be noted that eight treatments by the Swift-Ellis technic carried out at (presumably) three week intervals were without influence on the spinal fluid picture, a fact in itself pointing to a probably obstinate type of nervous system involvement, subsequently confirmed by the later appearance of unmistakable general paralysis. This situation would accordingly seem to call for the adoption of one or more of the four following procedures: continuation of the Swift-Ellis technic but at shorter intervals, its supplementing with intracisternal injections,[1] a thorough trial of tryparsamide, and treatment with malaria. Indeed, I believe it not too radical, in view of the time-conserving nature of the malarial treatment, it being completed within two weeks, to employ that mode of therapy at the outset in patients in whom the persistence of strongly positive spinal fluid findings after a thorough trial of arsphenamine intravenously makes the presence of a refractory form of neurosyphilis distinctly a possibility. For, although it is true that the malaria treatment influences the spinal fluid abnormality either little or only very gradually,[8] its effect on the underlying disease is in many cases undoubtedly considerable;[9] and this effect is brought to bear with such economy of time as to allow the more ample opportunity for the subsequent use of more protracted modes of treatment, such as tryparsamide and intraspinal injections.

Case 4.—Within two years of a chancre there was an attack of unconsciousness, the spinal fluid showing many hundred cells and a positive Wassermann reaction. Three years later there were Argyll Robertson pupils; the knee jerks were greatly diminished; there were definite ataxia, some speech defect, marked tremor of the circumoral muscles, and some memory defect perceptible to the patient. After a course of intravenous injections of arsphenamine, some improvement in memory defect was alleged by the patient.

In this case the omniscience of "hindsight" is less in evidence, the problem being a present one. This patient exhibits symptoms so suggestive as to place the burden of proof on him who says that he does not present a fairly early case of general paralysis, even in the absence of a spinal fluid examination. Which, then, is the better for the patient: To ignore the possibility that his may be a case of general paralysis, only to discover too late that the process was in fact a "malignant" one; or to treat the patient, beginning now, as though his case were of the "malignant" type, so that if in reality "benign," so much the more readily will some therapeutic result be achieved, while, if "malignant," only in the most intensive treatment possible may hope for a favorable outcome lie?

The deduction that seems inescapable from considerations such as the foregoing is that it is above all important to determine whether the treatment given the patient is accomplishing the purpose intended, regardless of how the case may be classifiable from a purely pathologic standpoint. In other words, it does not practically matter, as indeed we have already said, what nosological type of neurosyphilis the patient is suffering from nearly so much as it matters what answers we can give, in the individual case, to such questions as these: Is the patient receiving the right kind of treatment and the right amount of treatment, as judged by a definite effect on the spinal fluid findings? If this effect fails to come about after a conscientious effort to produce it, is it not time to alter the treatment accordingly—to make it more intensive or to adopt a different therapeutic agent? In case of doubt on the score of the sufficiently favorable response of the patient, should it not be assumed for his protection that he presents a refractory form of neurosyphilis for which more active therapy is needed, until the contrary can be proved?

Speaking concretely, a patient known to have neurosyphilis (whether asymptomatic or not) should receive a course of at least twelve weekly intravenous injections of arsphenamine or of neo-arsphenamine. At the end of such a course it is absolutely necessary to discover what effect this minimum treatment has had on the spinal fluid. Numerous cases clear up completely under this amount of therapy, or give promise of doing so under some further systemic treatment. Others may show a certain amount of modification of the spinal fluid picture; and here the question whether a course of intraspinal injections or several courses of tryparsamide is not greatly preferable to a continuance of intravenous arsphenamine injections immediately presents itself. Needless to say, rigid control of the treatment by means of repeated spinal fluid examinations remains imperative. Still other cases will show no change whatever in the spinal fluid, so far as the Wassermann reaction and the colloidal gold curve are concerned; and in these it is evident from the outset that the most intensive methods of antisyphilitic treatment will have to be adopted and adhered to. Indeed, there is some reason to believe, as has already been suggested, that in these known pernicious cases two weeks given over to malaria may be worth several months of the intraspinal or tryparsamide therapy with which the malaria can be immediately followed up.

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[8] Bunker and Kirby (footnote 3). Kirby, G. H.: The Effect of Malaria upon the Spinal Fluid Findings in General Paralysis, unpublished.

[9] Bunker, H. A., Jr., and Kirby, G. H.: Treatment of General Paralysis by Inoculation with Malaria: A Second Report, in preparation.

Stokes[10] has recently spoken trenchantly of the necessity for individualizing the treatment of the tabetic patient. How can it be that the need is less crying for individualizing the treatment of the neurosyphilitic patient in general? If this is done in somewhat the manner that has been roughly indicated in the foregoing, it is not impossible that the more disastrous results arising out of neurosyphilis may be averted more frequently and successfully than is now the case.

SUMMARY

1. The differential diagnosis between the meningovascular and parenchymatous types of neurosyphilis is often difficult and sometimes impossible; for the symptoms (if present) may not infrequently fail to serve this end, while the spinal fluid findings provide evidence that may or may not be of value.

2. From a practical standpoint, however, the nomenclature employed is quite unimportant in comparison to the necessity for controlling the treatment of the neurosyphilitic patient by means of repeated examinations of the spinal fluid. For the disappearance merely of the symptoms does not represent the end sought for if the spinal fluid findings continue positive; neither symptoms nor pathologic condition of the spinal fluid must remain present if the actual aim of therapy is to be achieved. And if such a result is not being brought about by the method of treatment in use, then that treatment is obviously not the right treatment for that particular case, and must be changed either in intensiveness or in kind rather than adhered to in the face of its proved inefficacy.

3. It is suggested that in at least the serologically intractable cases, the presumable preparetic patients, malaria finds a place as a therapeutic agent of the first rank, since it acts against the neurosyphilitic infection in a definite if little understood manner, and with an economy of time that allows ample opportunity for the subsequent use of more time-consuming specific methods.

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[10] Stokes, J. H., and Schaffer, L. W.: Clinical Management and Response of Tabetic Patients, J. A. M. A. **85**:1271 (Oct. 24) 1925.

Relative Value of Various Antiseptics.—The antiseptics tested have included alcohol, iodine, mercuric chloride, mercurochrome, acriflavine, protargol, albargin, gentian violet, neo-arsphenamine, and hexylresorcinol. Pieces of spleen of a freshly killed rabbit were placed one minute in a suspension of *Staphylococcus aureus*, and then put in graded solutions of the antiseptic for twenty minutes. In the majority of instances, particularly in the case of several of the newer antiseptics, bacteria proved decidedly more resistant than cells. The most favorable results were obtained with iodine, mercuric chloride, and neo-arsphenamine. Acriflavine, gentian violet and mercurochrome gave the least favorable results. A second series of experiments was carried out in which the antiseptic was added directly to the plasma culture medium. Inhibition of bacterial growth was seen in dilutions of plasma of 1:30-40,000, while the cells were only slightly damaged by these dilutions. The findings with acriflavine and mercurochrome were quite as unfavorable as in the other tests. In general the tests suggest that in so far as the direct action on cells and staphylococci are concerned, some of the classic antiseptics, such as iodine and mercuric chloride, approach nearer the ideal than certain of the newer preparations, and that neo-arsphenamine might be hopefully employed in generalized bacterial infections as well as in certain protozoan diseases.—Lambert, R. A., and Meyer, J. R.: *Proc. Soc. Exper. Biol. & Med.* **23**:429 (March) 1926.

ADVANCED MENINGOCOCCUS MENINGITIS

TREATMENT BY COMBINED VENTRICULAR, CISTERNAL AND LUMBAR PUNCTURES *

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The introduction by Flexner, in 1907, of a curative serum for epidemic cerebrospinal meningitis has reduced the mortality under the most favorable conditions to a level now variously estimated at from 20 to 25 per cent. This relatively high death rate may be due to three factors: first, extreme virulence of the organism, producing a fulminating meningitis; second, an organism of different type from that used in preparing the antimeningococcus serum, and, third, late recognition of the disease. The latter is certainly the more common, since the fulminating type is rather rarely seen and the standard serums now on the market are polyvalent.

The routine administration of antimeningococcus serum by lumbar puncture has given gratifying results only in early cases. In late cases in which treatment was by lumbar puncture, the mortality has been very high, and in those patients who survive, hydrocephalus and other serious sequelae are comparatively common. These discouraging results are often due to spinal subarachnoid or ventricular block. It is my purpose in this paper to emphasize the value of ventricular and cisternal punctures in advanced meningococcus meningitis, illustrating with a typical case.

Ayer[1] has shown that, without spinal block, 20 cc. of serum introduced by lumbar puncture does not reach the cisterna magna during the period of injection; likewise, 30 cc. of india ink injected into the lumbar subarachnoid space of a cadaver barely blackens the base of the brain. In contrast to these findings, the introduction of a similar amount of india ink by cisterna puncture stains the entire cerebral cortex as well as the basilar cisterna. Since the meningococcus reaches the cerebral subarachnoid space by way of the nasopharynx and involves the spinal canal secondarily, it seems logical to introduce the curative serum by a route that will insure maximal concentration, and maximal distribution over the areas first infected.

Puncture of the cisterna magna gives this optimal route and has been shown to be a safe and efficient procedure in the hands of those who understand the anatomy of the region. We therefore believe that any patient with epidemic meningitis who is not showing satisfactory progress under lumbar therapy should be treated by the introduction of serum directly into the cisterna magna. Indeed, certain authors have suggested the latter procedure as the routine method of treatment for all cases, discarding lumbar puncture as definitely less efficient.

However, it is in the presence of a spinal subarachnoid block, a not uncommon complication in late cases, that cisterna puncture is not only indicated but imperatively demanded. The first application of this method was reported by Wegeforth, Ayer and Essick.[2] Unfortunately, the procedure was used too late in the disease to save life. Later, Ayer[1] reported the first successful case in which, as in the one reported in this communication, the patient also developed ventricular infection requiring the intraventricular injection of serum. Subsequently, Mitchell and Reilly[3] reported the successful treatment by cisterna puncture of a 4 months old infant with spinal subarachnoid block. Ebaugh[4] had five complete recoveries in eight cases of advanced *meningococcus meningitis*. A successful case in which treatment was by cisternal-lumbar irrigation is referred to by Ayer.[5] That cisterna puncture is potentially dangerous is recognized by all, but in the hands of those familiar with the anatomic structures involved, it has proved a safe procedure. This is shown by Ayer's[6] compiled statistics of 1,985 punctures and Ebaugh's[4] later figures of approximately 1,550 personally performed punctures. About 1,000 of the latter are included in the former report. They were performed for a variety of conditions, principally for the treatment of cerebrospinal syphilis and for the diagnosis of spinal cord tumors, only eleven cases of meningococcus meningitis being included.

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[1] Ayer, J. B.: Puncture of the Cisterna Magna, Arch. Neurol & Psychiat. **4**:529 (Nov.) 1920.

[2] Wegeforth, Paul; Ayer, J. B., and Essick, C. R.: The Method of Obtaining Cerebrospinal Fluid by Puncture of the Cisterna Magna (Cisterna Puncture), Am. J. M. Sc. **157**:789 (June) 1919.

Ventricular puncture for the introduction of antimeningococcus serum, first brought into prominence by Cushing and Sladen,[7] has proved of great value. In fact, Howell and Cohen[8] now consider this route much superior in infants to the more commonly used lumbar puncture. They also recommend cerebral subarachnoid injections through the anterior fontanel. They show that a large number of apparently cured patients are found, on follow up examination, to develop hydrocephalus.

The use of alternate cisternal and lumbar puncture to prevent subarachnoid block has been suggested by Ebaugh. Combined ventricular, cisternal and lumbar punctures in the presence of both cerebral and spinal block have been used successfully by both Ayer and myself.

A typical example of the complication of ventricular and spinal subarachnoid blocks in an advanced case of meningococcus meningitis with complete recovery and no evidence of hydrocephalus over two and one-half years later is here reported.

REPORT OF CASE

N. M. N., a girl, aged 8, seen June 8, 1923, with an unimportant family history and previous illnesses, was in semicoma, but when aroused was delirious. It was stated that she had been sick only twenty-four hours, but the mother was a Christian scientist, and the illness may not have been recognized until a serious condition developed.

The child was well developed and nourished; she was acutely ill, semicomatose, delirious and very restless. The head was sharply drawn back, the neck held rigid, and the spine kept in a mild opisthotonos position. The neck could not be flexed. Attempts to do so caused the child to scream and draw up the lower extremities. All reflexes were exaggerated. There was a bilateral Kernig sign. A small ecchymotic area, about 1 cm. in diameter, was noted on the right upper eyelid. Petechial hemorrhagic spots were present at the angle of the mouth and over the chest, abdomen and extremities, most marked in the bend of the elbows and knees. The pupils were somewhat dilated, but reacted to light. The child frequently rubbed her hands over her eyes, as if attempting to clear her vision. She was apparently blind, as no reaction was elicited by passing the fingers rapidly in front of the eyes. The ears, nose and throat were normal, except for enlarged tonsils. The tongue was dry coated and deeply furrowed. There was a bilateral cervical adenitis.

Lumbar puncture yielded a definitely yellowish, very cloudy fluid under marked pressure. Throughout the fluid were numerous large flakes of pus, similar to those seen in a thoracic empyema of several days' duration. Globulin and albumin were present in large amounts. Smears showed large numbers of intracellular gram-negative diplococci. The diagnosis of epidemic meningococcus meningitis was confirmed by culture.

On admission, the temperature was 101.4 F., the pulse from 90 to 110, and the respirations, 22. After a lumbar puncture with the withdrawal of 45 cc. of very purulent cerebrospinal fluid, 30 cc. of antimeningococcus serum was administered by the lumbar route. One hour later, the child was slightly more rational, complaining of very severe pain in the head. Five hours later, 30 cc. of serum was given intramuscularly. Codein hypodermically and chloral by rectum were required to control restlessness; 650 cc. of saline solution was given subcutaneously.

June 9, she was still irrational, but understood what was said to her. The temperature was 99, the pulse, 84, and respiration, 18. A slight chill was followed later by a temperature of 101.4 F., pulse, 120, and respiration, 20. Lumbar puncture was done at 11 a. m. The fluid was under pressure, but not so cloudy; 30 cc. of antimeningococcus serum was given. At 7 p. m., the temperature had risen to 104.4, the pulse was 112, and respiration, 20. A lumbar puncture was done, and 40 cc. of yellowish, cloudy fluid under pressure was withdrawn; 30 cc. of serum was given.

June 10, the condition was about the same. The temperature did not drop below 102 F. The patient did not recognize any one, but understood commands. A lumbar puncture was done at 11 a. m., with the withdrawal of 40 cc. of slightly cloudy fluid, with not much pressure; 30 cc. of serum was given. The temperature was slowly rising. The patient cried out on slight motion; she complained of severe pain in the head, neck and legs. At 8 p. m., the temperature was 103. At lumbar puncture, the fluid was not under pressure; it was slightly cloudy, with no organisms in the smear; 30 cc. of serum was given.

June 11, the patient was very drowsy, sleeping much of the time, but cried out at intervals. She was difficult to arouse, and did not respond to commands. The temperature was 104.4 F. The pulse was from 110 to 120, and respiration, 20. Cisterna and lumbar punctures were done at 11 a. m. The lumbar fluid was slightly cloudy and yellowish, with no pressure, only 20 cc. being obtained. No organisms were found on smear. A cisterna puncture with the lumbar needle still in place was done; 30 cc. of very cloudy, opal fluid under marked pressure was withdrawn. Fifteen cubic centimeters of serum was introduced by the lumbar route and 15 cc. through the cisterna puncture. The cisterna fluid differed markedly from that obtained by lumbar puncture and showed many organisms on smear. Both fluids gave a growth on culture. The temperature dropped to 100.8, the pulse to 105, and respiration, 20. The mental condition was about the same. The child was apparently sleeping, but talked almost constantly. At 7 p. m., the temperature was 103.4, the pulse, 120, and respiration, 25. A lumbar puncture, with the withdrawal of 35 cc. of slightly cloudy fluid, was done; 30 cc. of serum was given. No organisms were found on smear, but a culture later showed many colonies.

June 12, the temperature dropped steadily after the last puncture, reaching 99.8. It then rose in spite of the two injections of serum to 105.2. The general condition was unchanged. At 2 p. m., the temperature was 100. A lumbar puncture was done, 40 cc. of cloudy fluid being withdrawn. A smear showed organisms. Thirty cubic centimeters of serum was injected. At 5 p. m., the patient was weaker, and cyanotic under the eyes. A cisterna puncture was done, with the fluid under marked pressure and very cloudy and yellowish. There were many organisms in the smear; 50 cc. was withdrawn and 40 cc. of serum injected intercisternally. Lumbar puncture at the time of the cisterna puncture showed much less pressure, the spinal subarachnoid block still persisting. Twenty cubic centimeters of serum was given in the lumbar region.

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[3] Mitchell, A. G., and Reilly, J. J.: The Introduction of Antimeningococcus Serum by Cistern Puncture: Report of a Case of Meningococcus Meningitis in an Infant Aged Four Months Cured by This Method, Am. J. M. Sc. **164**: 66 (July) 1922.

[4] Ebaugh, F. G.: Puncture of the Cisterna Magna, J. A. M. A. **85**: 184 (July 18) 1925.

[5] Ayer, J. B.: A Brief Review of Certain Mechanical Considerations in the Treatment of Meningitis, New York State J. Med. **24**: 389 (March 21) 1924.

[6] Ayer, J. B.: Puncture of the Cisterna Magna: Report of One Thousand Nine Hundred and Eighty-Five Punctures, J. A. M. A. **81**: 358 (Aug. 4) 1923.

[7] Cushing, Harvey; and Sladen, F. J.: Obstructive Hydrocephalus Following Cerebrospinal Meningitis with Intraventricular Injection of Antimeningitis Serum (Flexner), J. Exper. Med. **10**: 548 (July) 1908.

[8] Howell, W. W., and Cohen, S. A.: Intraventricular and Subdural Serum Treatment of Meningococcus Meningitis in Infancy, Am. J. Dis. Child. **24**: 427 (Nov.) 1922.

June 13, the general condition was slightly better. The temperature dropped to 100 after the cisterna puncture of the previous day. A lumbar puncture at 11 a. m. yielded a cloudy fluid under slight pressure; 45 cc. was withdrawn, and 45 cc. of serum injected. Smears were negative. Cultures showed only two colonies. The mental condition was not improved. At 4: 30 p. m. a triple puncture—lumbar, cisterna and right ventricle—was done. The lumbar fluid was not under pressure and was cloudy; 20 cc. was removed. The cisternal fluid was under pressure, cloudy and yellowish; 40 cc. was withdrawn. The ventricular fluid, obtained by trephining the skull and puncturing the posterior horn of the right lateral ventricle, showed marked pressure after cisternal pressure had been completely reduced; 25 cc. of ventricular fluid was removed; it was slightly cloudy, colorless but showed many organisms on smear. Fifteen cubic centimeters of serum was introduced into the ventricle, 30 cc. into the cisterna magna and 15 cc. into the lumbar space.

The gross appearance of the fluids obtained by the three practically simultaneous punctures was strikingly different, indicating, as had the difference in pressure, that a double block existed. One obstruction was in the spinal subarachnoid space, the other somewhere between the lateral ventricle and the cisterna magna. The temperature rose to 104 during the evening.

June 14, the general condition was much better. The mental responses were more normal. The child was less irritable and slept quite normally. At 1 p. m., the temperature was 99.6. A lumbar puncture was done; there was little pressure of the fluid, which was cloudy; 45 cc. was removed and 45 cc. of serum introduced by gravity. At 7 p. m., the temperature was 101.2. Ventricular, cisternal and lumbar punctures were done. The same difference as on the previous day was noted. Fifteen cubic centimeters of serum was introduced into the ventricle, 30 cc. into the cisterna and 15 cc. into the lumbar space. Cultures of the fluids from all three punctures were negative.

June 15, the patient was fairly comfortable. She talked rationally. At times, she complained of severe headache. The temperature rose to 103.8 during the night, but went down to 102.4 during the day. At 4 p. m., a triple puncture was done. The lumbar fluid was under normal pressure, and slightly less cloudy; no organisms were shown on smear. A culture later showed growth. The cisterna fluid was cloudy, with less pressure than before; there were no organisms on smear or culture. The ventricular fluid was under moderate increase of pressure, slightly cloudy, and showed no organisms on smear or culture. Fifteen cubic centimeters of serum was given into the ventricle, 20 cc. into the cisterna and 45 cc. by the lumbar route.

June 16, the general condition was much improved. The child was rational, but complained of headache, stiff neck and backache. The highest temperature during the day was 103. A triple puncture was done. The 40 cc. of lumbar fluid removed was only slightly cloudy, with no pressure; 30 cc. of slightly cloudy cisterna fluid was present after the withdrawal of the lumbar fluid, but with low pressure. The 30 cc. of ventricular fluid withdrawn was slightly cloudy, with normal pressure. Thirty cubic centimeters of serum was introduced by gravity into the right ventricle; none appeared in the cisternal needle. Twenty cubic centimeters of serum was then introduced into the cisterna magna and 30 cc. by the lumbar route. All fluids were negative on smear and culture.

June 17, the condition remained the same. The temperature dropped during the day to 99. A lumbar puncture was done, with easy withdrawal of 60 cc. of cloudy fluid; 45 cc. of serum was injected. There was very slight growth on culture.

June 18, the patient was perfectly rational; she was still restless and talkative, but slept well. The temperature rose to 103.2, after dropping to 99. A lumbar puncture was done, with the withdrawal of 60 cc. of slightly cloudy fluid; 45 cc. of serum was injected. Cultures and a smear of the fluid were negative.

June 19, the temperature had not risen above 100.6. The neck and back were still stiff. A lumbar puncture was done; 45 cc. of slightly cloudy fluid under normal pressure was removed. No serum was given. The mental condition was normal. The child had the best day since entering the hospital.

June 20, cultures of the fluid removed the previous day were negative. The patient was bright, laughing and talking. The temperature had reached normal.

June 22, she was bright, but complained of pain in the head and both legs. A lumbar puncture gave nearly clear colorless fluid under normal pressure; 45 cc. was withdrawn. The smear and culture were negative. Only a slight elevation in temperature occurred.

Recovery was rapid. The stiffness of the neck and spine persisted for several days longer. Headache and pain in the back and legs did not recur. The patient had had incontinence of both urine and feces, but this difficulty quickly cleared up with the return of normal mentality.

A total of 560 cc. of antimeningococcus serum was introduced by eighteen lumbar punctures, 155 cc. by six cisterna magna punctures and 75 cc. by four ventricular punctures, making a total of 790 cc. of serum required. None of the antimeningococcus serums on the market agglutinated the organisms in this case, but the serum used killed all organisms in cultures. The fact that the serum was not absolutely specific for the particular strain of meningococcus involved may account for the unusually large amount of serum used. All injections were made by gravity. The technic used was that described by Ayer.[1]

A spinal subarachnoid block was evident after the fourth day and persisted to the tenth day. Ventricular block was present by the sixth and persisted until the ninth day.

The child had no remembrance of the first two weeks in the hospital and did not recognize her parents when her mind at first appeared clear. She returned to school in a short time and showed no mental retardation. There has been no headache or vision disturbance and no check in growth. Now, two years and seven months later, she is apparently perfectly normal physically and mentally.

CONCLUSIONS

The treatment of meningococcus meningitis by the lumbar route alone has given satisfactory results only in the presence of the most favorable conditions—early diagnosis, specific serum and low or moderate virulence of the organisms. Many patients discharged as cured are found on follow-up examination to have hydrocephalus indicating a cisternal, ventricular or cortical subarachnoid block, which had not been recognized and therefore not treated.

Puncture of the cisterna magna is indicated in all cases not showing satisfactory progress. The technic is not difficult, but should be thoroughly mastered on the cadaver before application to the living subject.

Antimeningococcus serum introduced by cisterna puncture reaches the basilar cisterna and cerebral subarachnoid spaces in greatest concentration, whereas, serum introduced by lumbar puncture barely reaches the cisterna magna.

Cisterna puncture, therefore, promises the maximum distribution with the maximum concentration in the regions first involved.

Block of the spinal subarachnoid space may be prevented by early cisterna puncture. The presence of such a block makes this procedure imperative.

Ventricular puncture, either through the anterior fontanel or in older children through a trephine opening, has proved a valuable means of treating meningococcus meningitis. It is demanded in cases showing ventricular block.

Cisterna or ventricular puncture or both combined, with the introduction of curative serum into the basilar cisterna or ventricles, will do much toward preventing subsequent hydrocephalus. In advanced or fulminating cases, these procedures may be the means of saving life.

ALBUMINURIA IN CHILDREN *

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The significance of albumin in the urine of apparently healthy children is still the subject of much discussion. Most of these cases are accidentally discovered in the routine examination of urine in schools, orphan asylums and dispensaries Bright,[1] in 1827, regarded albumin in the urine as definite evidence of kidney disease. This view was held until Ultzmann,[2] in 1870, suggested the possibility of this urinary finding without an accompanying nephritis, and Leube,[3] in 1877, proved that albumin is found in the urine of many apparently healthy people. Various theories have been advanced to account for this benign albuminuria. Hooker[4] reviews the voluminous literature up to 1910. Post and Thomas[5] and Lauener[6] have summarized it up to 1923.

The frequency of the condition in children varies in the reports from different observers. Capitan[7] reported the condition in 40 per cent of healthy children, Langstein[8] in 12 per cent of children over 5 years of age, *Bugge[9] in 15 per cent, and Lauener[6]* in as high as 38 per cent. Other research work concerning albuminuria in children may especially be found in articles by Risselade,[10] Fischel and Popper,[11] Stumpke,[12] Jehle, Weith, Scholder and Swenson,[13] Faber,[14] Nassan,[15] Hamelberg,[16] and Hamill and Blackfan.[17] All of these investigators found a high percentage of albuminurias among children, especially Hamill and Blackfan, who examined 124 children whose ages ranged from 18 months to 14 years. They found an albuminuria, at some time or other, in 89 per cent of these cases

It is not our purpose in this paper to repeat the study of large groups of children to determine the incidence of albuminuria, but intensively to study small groups with the objective of throwing some light on the cause, or causes, and significance of the condition.

However, the incidence of albuminuria in 5,000 school children has been so thoroughly investigated by Lauener[6] that we feel justified in summarizing parts of his work in table 1.

TABLE 1.—*Summary of Lauener's Cases of Albuminuria in Five Thousand School Children*

Age	Number of Children	Percentage Showing Albuminuria	Percentage of Boys with Albuminuria	Percentage of Girls	Percentage Showing Trace of Albumin	Percentage Showing ++ or More
6- 7	1,246	6.7	5	8.5	5.6	0.2
10-11	1,350	27	18.6	35.5	15.6	5.7
15-16	2,481	38	29.5	46	25.5	3.2

Because of the confusion in the literature regarding the etiology of the so-called benign albuminurias, we have attempted to determine the causes by analyzing two groups of children of very different environmental and physical conditions.

One of the groups studied was composed of children having no special complaints or illnesses. They were recruited from the homes of the very poor in which hygienic conditions were at their worst, diets were improperly balanced, and teeth, tonsils and other potential foci of infection neglected. Consequently, undernourishment and anemia were common. This group will hereafter be designated as group 1.

The second group studied consisted of children living in a well regulated orphans' home under the supervision of a watchful physician. Their hygienic surroundings were very good. They lived a well regulated life with the proper balance between school work, play, recreation and rest. The meals were properly balanced. Foci of infection were eliminated as soon as discovered. Periodic physical examinations were made. This group will hereafter be known as group 2.

TABLE 2—*Data in Cases Presenting Albuminuria in Five Hundred and Twenty Children Examined (Morning Specimens Used)* *

Group	Number of Children Examined	Boys	Girls	Age Range	Average Age	Percentage of Total Showing Foci of Infection	Total Percentage of Albuminuria	Percentage Boys	Percentage Girls
1	189	103	86	2-16	8	63	60†	45	70
2	331	181	150	6-16	11	0	15	10	20

* The microscopic findings were abnormal in less than 1 per cent of the cases

† Eighty per cent of the total albuminurias (60 per cent) showed evidence of malnutrition and foci of infection

TABLE 3—*Results of Reexamination of Same Cases Over a Period of One Year*

Group	Number of Children Examined	Boys	Girls		Total Percentage of Albuminurias	Percentage Boys	Percentage Girls
2	331	151	170	6 months later	24	20	30
2	331	181	150	1 year later	15	9	22

The results of the urine examinations are shown in tables 2 and 3.

From these observations, we conclude that the incidence of albuminuria is much higher in children living under poor hygienic surroundings, having many foci of infection (untreated) and for the most part being anemic and undernourished. That these factors do play a prominent rôle in the causation of so-called benign albuminurias in children is evidenced by the fact that many respond to the treatment of these etiologic factors, as will be described later.

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* From the Albuminuria Clinic of the Michael Reese Dispensary and the Marks Nathan Orphan Home

[1] Bright, Richard. Guy's Hosp Rep, 1827

[2] Ultzmann Wien med Presse **11**: 81, 1870

[3] Leube Virchows Arch f path Anat **72**: 145, 1878

[4] Hooker, D R: Postural or Orthostatic Albuminuria, Arch. Int Med **5**: 491 (May) 1910

[5] Post, W E, and Thomas, W. A: Orthostatic Albuminuria, J. A. M A **80**: 293 (Feb 3) 1923

[6] Lauener, P: Schweiz med Wchnschr **52**: 1170 (Dec.) 1922.

[7] Capitan: Paris thesis, 1883

[8] Langstein: Die Albuminurie alterer Kinder, 1908

[9] Bugge, J Norsk Mag f Lægevidensk 5 r **11**: 1603, 1913

[10] Risselade: Dissert, Zurich, 1916

[11] Fischel and Popper: Jahrb f Kinderh, 1915

[12] Stumpke, M K 1917

[13] Jehle and others: Svenska Läk Sällsk Handl **42.**

[14] Faber: München med Wchnschr, 1917

[15] Nassan: Ztschr f klin Med **84.**

[16] Hamelberg, J. M.: Nederlandsch Tijdschr. v Geneesk **1**: 679 (March 9) 1918

[17] Hamill, S M, and Blackfan, K D: Frequency and Significance of Albumin in the Urines of Normal Children, Am J Dis Child **1**: 139 (Feb) 1911.

The orphanage children (group 2) have a minimum of these factors present. Lest our conclusions be misinterpreted, we wish to repeat that the findings of carious teeth, enlarged and infected tonsils and adenoids, or infected nasal sinuses merely add to the picture of a child below par physically and are not, so far as we can determine, the specific causes of the albuminuria. We feel that the correction of such defects results in an improvement of the albuminuria, mainly so far as it helps to produce a general improvement in the condition of the child.

IDIOPATHIC OR "GROWTH" ALBUMINURIA

Albumin may appear a considerable time before puberty, but it reaches its greatest incidence during adolescence, the period of greatest growth. Lauener has used the term "growth" albuminuria. He is of the opinion that growth, with its attendant phenomena, is the main factor in the albuminuria of juveniles. In his cases he found it more frequent in girls than in boys, which he attributes to their more rapid and intensive growth. We wish to direct attention to this and to point to our experiences with the orphanage children. Here are children in whom all foci of infection have been removed, who to all appearances are normal and well nourished, and whose weight curves show a definite increase; and yet, a small but fairly constant percentage manifest benign albuminuria. If Lauener's deductions are correct, it would seem that 78 per cent of the albuminurias in the orphanage children would fit into the group which he classifies as "growth" albuminurias. The remaining 22 per cent were of the orthostatic type (table 4).

The albuminuria in many of the cases studied was transitory in character, as revealed by repeated urine examinations. In group 1, on sixty-five of the 189 children studied, from two to six urinalyses were made over a period of one year. Forty of the sixty-five varied from positive to negative and back to positive or negative again. In group 2, fifty of the 331 urines examined were positive on the first examination. One week later, of the same fifty, only forty-three were positive for albumin, and six months later, only twenty-one of the original fifty albuminurias were still positive. Also sixty-two cases in which the first examination was negative showed a positive urine six months later.

ORTHOSTATIC ALBUMINURIA

Many observers have maintained or implied in their writings that the non-nephritic albuminurias found in urines on routine examinations are based on an orthostatic or postural albuminuria. Post and Thomas[5] apparently assume that the statistics of most previous authors[18] refer to the incidence of orthostatic albuminuria. Saito[19] states that 15 per cent of 148 healthy school boys from 10 to 14 years of age showed albuminuria, and that 90 per cent of the positives were of the orthostatic type. Hamill and Blackfan,[17] however, definitely imply that, although a large percentage of their cases (children) showed euglobulin in the urine, which is a fairly constant finding in orthostatic albuminuria, most of these were not orthostatic, because this amount of proteinuria was not increased by the upright posture and exercise. They found no orthostatic albuminuria in 124 cases of albuminuria that were studied. Lauener[6] states that "orthostatic and growth or 'physiological' albuminurias should have separate groupings." His statistics are concerned mostly with nonorthostatic types.

From our studies we believe that most of the so-called benign albuminurias in children are not of the orthostatic type. By orthostatic albuminuria we understand a condition in which the urine excreted while the patient is lying down is albumin free, with the subsequent appearance of it after he rises. In short, if the first specimen passed in the morning, when compared with a specimen obtained later in the day after normal activities, contains as much albumin or more, then the condition does not belong in the category of the orthostatic albuminuria.

Table 4—*Comparison of Morning and Afternoon Urine in Cases in Which the Afternoon Specimen Had Been Found Positive*

Total Number of Cases in Which Afternoon Specimen Had Been Found Positive	Total Percentage of Orthostatic Patients Among the 32 Albuminurias (in the 249 Children)	Percentage of Orthostatic Patients Among the Total Number of Children (249) Examined	Percentage of the 12* Boys Negative in the Morning and ++ or More in Afternoon	Percentage of the Total Boys (138) Examined Negative in the Morning and ++ or More in the Afternoon	Percentage of the 20* Girls Negative in the Morning and ++ or More in the Afternoon	Percentage of the Total Girls (111) Examined Negative in the Morning and ++ or More in the Afternoon
32 Boys 12* Girls 20*	7, or 22%	7, or 2.8%	4, or 33%	4, or 2.9%	3, or 15%	3, or 2.7%

We examined the afternoon urine specimens in group 2. In those found positive, the first specimen passed in the morning (night urine) and an afternoon specimen were reexamined. The results are summarized in tables 4 and 5.

Table 5—*Data of Albuminuria in Afternoon (Late Afternoon Specimens)*

Total Number of Cases	Percentage of Total Positive in Afternoon	Percentage of Total Boys (138) Positive in Afternoon	Percentage of Total Girls (111) Positive in Afternoon
249 Boys 138 Girls 111	32, or 12.8%	12, or 8.2%	20, or 18.9%

We believe our results indicate that the greater percentage of albuminurias in children are not the postural or orthostatic type. We admit, however, that at times it is difficult to differentiate between a so-called growth albuminuria and an orthostatic albuminuria, especially as one may merge into the other; but we feel that postural relationship is the most definite constant characteristic of the orthostatic albuminuria. Whereas some would assign a greater proportion of benign albuminurias to the orthostatic variety, we are more inclined to separate this group and to add that the greater proportion of benign albuminurias in children are due to the asthenia and anemia resulting from foci of infection and to growth disturbances.

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[18] Those given in footnotes 7 to 17.

[19] Saito, H.: Clinical Investigations on Orthostatic Albuminuria, Am. J. Dis. Child. 22: 338-401 (Oct.) 1921.

ALKALIZATION

Post and Thomas[5] maintain that "every case of orthostatic albuminuria, with very rare exceptions, will become and remain albumin free, regardless of posture, exertion, time of day, or urinary concentration, as long as the urine remains neutral or slightly alkaline." Those cases which failed to respond were suspected of being the result of renal pathologic change. Nassan[20] observed similar results. Hamill and Blackfan[17] state that the reaction of the urine has no influence on the production of albumin.

Our results in ten cases studied agree mainly with the latter authors. An alkaline urine apparently did not cause the albumin to disappear, although in a few cases the amount of albumin was somewhat lessened.

TYPE OF PROTEIN

Until the recent work of Welker, it was generally agreed that the protein in the urine might be identified as either serum albumin or serum globulin, also referred to as euglobulin, or a combination of the two. Langstein[21] and Wallis[22] concluded that the protein precipitated by acetic acid added to cold urine was euglobulin, while Pollitzer[23] believed that the precipitate was caused by a combination of serum albumin and chondroitin-sulphuric acid. The precipitate is often referred to as the acetic acid body. Welker's[24] investigations disclose, however, that chemical tests for the identification of the types of protein in urine are difficult of application and interpretation, but that the precipitin test accurately identifies most of them. By means of the precipitin test, he found that the protein in urine may be identified as coagulable protein not precipitated in the cold by acetic acid (serum albumin, pseudoglobulin); or coagulable protein precipitated in the cold by acetic acid (euglobulin); or noncoagulable protein precipitated in the cold by acetic acid (mucin, nucleoprotein), and noncoagulable protein not precipitated by acetic acid at all (proteoses). There is no simple test for separating euglobulin, mucin and nucleoprotein available. All of these are precipitated in the cold by acetic acid. Hamill and Blackfan[17] especially investigated the type of protein found in the so-called albuminuria cases in children. Wallis and the latter authors believe that euglobulin is the protein mainly present in non-nephritic cases (leaky kidneys). The latter investigators noted that, in these benign albuminurias, the euglobulin was present three times as frequently as serum albumin. As these authors used only the chemical test and not the precipitin test, they of course included mucin and nucleoprotein as well as euglobulin in what they termed "euglobulin."

A simple test for albumin in the urine was used throughout our work. This test is the one commonly employed in the routine examination of urine in physicians' offices and laboratories. The technic is as follows:

> A test tube is filled about two-thirds full with clear urine. The upper portion of the urine is heated to boiling in the flame, and from 5 to 6 drops of 5 per cent acetic acid is added. The contents of the tube are viewed against a black background, and only those urines which exhibit no cloudiness are considered normal. In testing for euglobulin, the acetic acid is added to the cold urine. The urine is not heated at any time during the test for euglobulin.

The results of our investigations of the types of protein present as determined by the "cold" and "heat" acetic tests are given in table 6.

We concluded from these results that 26 per cent of the urines examined and 58 per cent of those showing a positive protein reaction contained either euglobulin, nucleo-albumin, mucin, or all of them, which precipitate out when acetic acid is added to the cold urine. As 26 per cent of the total were more positive in the hot urine, it is reasonable to assume that, at least in this number, serum albumin or pseudoglobulin, or both were present, and that in at least 18 per cent they alone were present, as this percentage reacted only in the heated urine. In two thirds of the analyses, the heat and cold test agreed (either positive or negative). In this series, 46 per cent of the total gave a positive protein reaction.

It appears from these results that either euglobulin, nucleo-albumin and mucin, or all, are prominent components of the protein in the urine in the benign albuminuria cases, but that serum albumin or pseudoglobulin may occur alone, even in benign albuminurias. Only by further investigations by means of the precipitin test can it be determined which one of the three proteins, euglobulin, nucleo-albumin or mucin, predominates in these benign albuminurias.

Table 6—*Results of Investigations of Types of Protein*

Total number of urines analyzed	906
Total number giving a positive protein test on the addition of acetic acid to the cold urine	248, or 27.4%
Total number giving a positive protein test on the addition of acetic acid to the heated urine	398, or 43.9%
Total number agreeing in both the cold and heated specimen (either positive or negative)	646, or 71.3%
Total number more positive in the heated than in the cold	238, or 26.3%
Total number more positive in the cold than in the heated	20, or 2.2%
Total number positive in the cold only	18, or 1.99%
Total number positive in the hot only	163, or 18%

COMMENT

All previous investigators agree that albuminuria is a frequent occurrence in children, especially in those over 6 years of age, becoming more frequent toward puberty. Most agree that the incidence is higher in girls. Globulinuria is generally accepted as a type of proteinuria that predominates, or is a prominent feature in these cases. Some authors maintain that most of these juvenile forms of albuminuria are of the orthostatic or postural type. Others contend that the majority are not of this type but nevertheless are harmless and of not as much importance as is customarily attached to them. Many cases have been followed into adult life and have shown no higher incidence of nephritis. It is generally agreed that the growing kidney may physiologically secrete albumin in the urine, and consequently during the period of most rapid growth (puberty) the greatest incidence occurs.

As a result of our studies, we believe that some of these albuminurias may be considered physiologic or growth albuminurias, but that many other etiologic factors may be present, which, when removed, result in the permanent disappearance of the condition. One of us has conducted an albuminuria clinic for several years for the purpose of finding the cause and eliminating it if possible in these cases. Foci of infection, especially chronically infected tonsils, adenoids, nasal sinusitis and abscessed teeth, are the chief offenders. Many cases of albuminuria have responded when treatment was directed toward these foci. Again,

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20. Nassan, E.: Ztschr. f. Kinderh. **33**: 133-147, 1922.
21. Langstein, L.: Die Albuminurie alterer Kinder, Leipzig, 1907.
22. Wallis, R. L. M.: Proc. Roy. Soc. Med. (Sect. Med.) **13**: 96 (May) 1920.
23. Pollitzer: Deutsche med. Wchnschr., March, 1912.
24. Welker, W. H.: Personal communications to the authors.

undernourishment and anemia often were associated with albuminuria, which responded to the overcoming of these factors. We reiterate that we do not believe that all of these factors (foci, etc.) have any direct specific effect on the kidney. They probably are a part of the picture associated with malnutrition or an under par condition with faulty blood volume and blood flow, resulting in hypofunction or impaired function of the body tissues. In short, the albuminuria is merely one symptom of a general systemic disturbance in these cases.

We wish to direct the attention of the physician to the dangerous practice of stressing the term albuminuria too greatly to the parent or to the patient. The harm done psychically may be worse than the condition physically. Albumin in the urine is a dreaded occurrence among the laity, and albuminuria neurotics can easily be created. The "disease" often occurs only in the physician's test tube and in the mind of the patient. However, the physician must not totally disregard these simple benign albuminurias. A functional albuminuria should be regarded much as a functional heart murmur. Every case should be under the control or observation of the physician for a variable period, certainly during the period of adolescence, and for a short period following.

We offer the following classification for the convenience of the practicing physician, thus doing away with a host of misleading terms:

Benign Albuminuria.

(*a*) Malnutrition albuminuria, frequently associated with anemia, underweight and systolic basal murmur. Foci of infection, especially infected tonsils, adenoids, nasal sinuses and carious teeth, are common causes of this malnourished condition

(*b*) Orthostatic albuminuria, associated with posture.

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According to our experience, the simplest methods of treatment should be followed. We would recommend first an intelligent explanation of the nature of the findings to the parent, explaining the simplicity and benignancy, and that it does not comprise a sickness or disease. The physician will often find that his problem is one of treating an intense, overanxious, hypochondriac parent rather than the child. Those cases which demand correction and elimination of apparent foci of infection certainly should have these done. Nutrition should be improved and anemia overcome. But we do not advise any excessive rest cure or restricted low protein diet as a remedy. Such measures may actually result in harm to children who are physically under par. The child should be allowed to lead a normal life with only such restrictions as are necessary to overcome any malnutrition; otherwise, freedom in every regard has proved to be the best remedy. Especial emphasis should be laid on the physical development of the orthostatic group.

Circulatory Changes in Anesthesia.—Chloroform is a poison to living cells, acting perhaps on the fatty surface film which controls permeability and adsorption. On the heart it causes dilatation and weak action, and under certain conditions fibrillar contraction, the cause of sudden syncope and death. . . . Chloroform, by poisoning the tissue cells and relaxing their tone, makes the whole body flabby, turns the circulation from a vigorous one through confined channels in a taut body to a sluggish one in a relaxed body, and the blood in consequence stagnates in dependent parts—hypostatic congestion. —Hill, Leonard: *Brit. M. J.*, April 24, 1926.

RECOGNITION AND MANAGEMENT OF THE CARDIOVASCULAR SURGICAL RISK *

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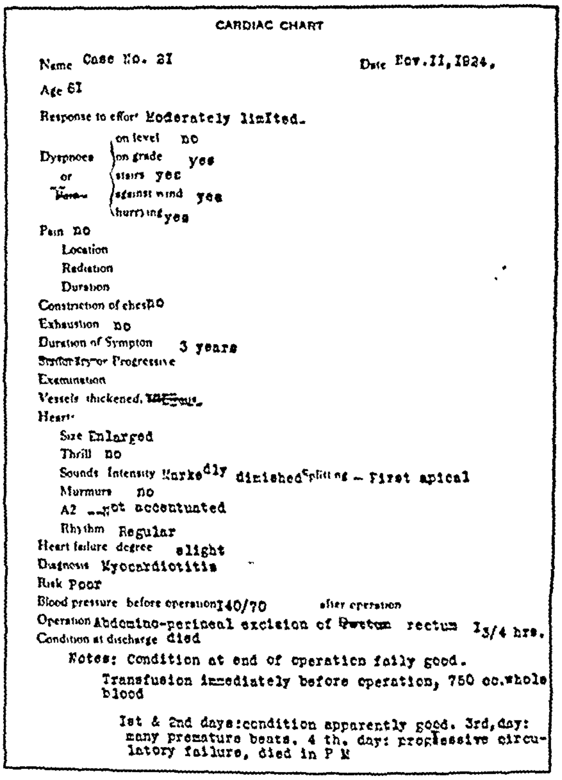
NEW YORK

There are few subjects in medicine in which an accurate knowledge is more urgently required than a patient's general fitness for undergoing an operation. It is well known that a major operation throws a great strain on the cardiovascular system; occasionally, this strain costs the patient his life.



CARDIAC CHART

Name Case No. 21 Date Nov.11,1924.
Age 61
Response to effort Moderately limited.
Dyspnoea or ~~Pain~~
- on level no
- on grade yes
- stairs yes
- against wind yes
- hurrying yes

Pain no
Location
Radiation
Duration
Constriction of chest no
Exhaustion no
Duration of Sympton 3 years
~~Stationary~~ or Progressive
Examination
Vessels thickened, ~~tortuous~~
Heart:
Size Enlarged
Thrill no
Sounds Intensity Markedly diminished splitting – First apical
Murmurs no
A2 not accentuated
Rhythm Regular
Heart failure degree slight
Diagnosis Myocardiotitis
Risk Poor
Blood pressure before operation 140/70 after operation
Operation Abdomino-perineal excision of ~~Rectum~~ rectum 1 3/4 hrs.
Condition at discharge died

Notes: Condition at end of operation faily good.
Transfusion immediately before operation, 750 cc.whole blood

1st & 2nd days:condition apparently good. 3rd,day: many premature beats. 4 th. day: progressive circulatory failure, died in P M

Cardiac chart, with findings.

A fatal termination for this type of patient clearly indicates that the gravity of the condition of the cardiovascular system was unrecognized. An accurate appraisal of the system might reasonably correct this unsatisfactory state of affairs. It seems that the anesthetist, by virtue of the unique opportunity he has for studying the conditions of the surgical patients before, during and after operations, occupies a strategic position for gaining information that of necessity cannot be obtained by the surgeon or the internist. It was decided to undertake the investigation of this subject and to learn, if possible, to appraise the cardiovascular system with sufficient accuracy to predict the fate of a patient about to undergo an operation. It was realized from the beginning that the acquisition of this type of knowledge, in which prognosis is the object, is a process of slow growth and results only from the accurate registration and correct evaluation of a large number of single instances of phenomena and associated phenomena. However, an extended study of this nature should yield results that will be valuable.

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* From the Department of Anesthesia of St. Bartholomew's Hospital.

That the study possess any degree of accuracy, it was necessary to supplement the work in anesthesia by attending cardiac clinics, and after several years of preliminary study, the work was begun. The accompanying chart was devised to insure uniformity in examination of the patients and for the purpose of permanent record. Owing to the fact that the majority of examinations are made immediately preceding the administration of the anesthesia, brevity and simplicity were required in the chart. In the first half of the chart, subjective symptoms are recorded for the reason so strongly emphasized by Mackenzie; namely, that they are the first manifestations of cardiovascular impairment. The physical examination is next recorded. As a rule this examination consumes only a few minutes. If, however, there is evidence of the presence of valvular, myocardial or vascular disease, the subjective symptoms and objective signs receive consideration in proportion to their gravity. In questionable risks the examination takes place, when possible, the day preceding the operation. The degree of heart failure, if any, is next considered. Then the cardiovascular diagnosis is made. We are now prepared to make a tentative appraisal of the patient's cardiovascular system. The heading entitled "Risk" is reserved for this purpose. A risk qualified "good" registers my belief that the patient's cardiovascular system will successfully withstand the strain of the operation, while "poor" indicates that it will not. The condition of the patient during and immediately after the operation, and the employment of any supporting measures, are also recorded. The postoperative course and the condition of the patient at discharge from the hospital complete the record.

In attempting a prognosis, the nature of the operation and the management of the patient before, during and after the operation must be considered. Adequate supporting measures may enable an impaired cardiovascular system successfully to withstand the strain of an operation, whereas without this support, progressive circulatory failure would be inevitable. In the designation of poor risks, the supporting measures are, in large part, discounted. That is to say, even though supporting measures are employed, the strain of the operation will be too great for the cardiovascular system. These supporting measures will be discussed in the latter part of the paper. Again, the duration of the operation is a factor bearing on the prognosis that is of the utmost importance. In this class of patients the rapidity with which the surgery is performed determines, to a large extent, its efficacy. The necessity of rapidity in these poor surgical risks cannot be too strongly emphasized. A patient of this type may withstand great surgical trauma for a short period, whereas prolonged trauma may kill him. The more surgery one sees, the more is one impressed by this fact. Therefore, in attempting a prognosis, the element of time is a vital factor.

During the past year, three patients were brought to the operating room overdigitalized. One of these cases was incorrectly diagnosed as a structural heart block. With this involvement of the conduction system and the likelihood of more extensive ventricular impairment, together with a moderate restriction of the cardiac field of response to effort by dyspnea, the patient was appraised as a poor risk (case 14). A gastro-enterostomy was performed. His condition at the end of the operation was such that a gastric resection was considered inadvisable. Recovery from the gastro-enterostomy was uneventful. This experience indicates the necessity of investigating the digitalization of patients before attempting to interpret one's findings. In patients with regular rhythm, therapeutic digitalization is of questionable value and overdigitalization possibly harmful.

Unfortunately, in this study it was not possible to make use of electrocardiograms, essential adjuncts in the appraisal of the cardiovascular system. Pardee[1] says: "The electrocardiogram has its own special variety of information; namely, the mechanism and character of the contraction of the muscle fibers of the heart. An examination of the heart is as incomplete without the electrocardiogram as it is without auscultation or a determination of the size of the heart. By omitting any of these methods, we may deprive our-

Table 1.—*Cardiovascular and Surgical Outcome* *

	Case																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Sex	M	F	M	M	M	M	M	F	M	M	M	F	M	M	F	M	F	M	M	F	M	F	F	F	F	F	F	M
Age	58	53	70	72	50	66	72	54	52	66	60	72	59	55	54	62	54	67	59	57	61	68	57	58	57	58	60	57
Dyspnea on effort	+	+	—	—	—	—	+	+	—	+	—	—	—	+	—	—	—	+	+	+	+	—	—	+	—	—	+	—
Retrosternal pain on effort	—	—	—	—	—	—	—	—	+	—	—	—	—	—	—	+	..	—	—	—	—	—	—	—	—	—	—	—
Precordial pain on effort	—	+	—	—	—	—	—	+	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+	—
Duration of symptoms																												
In years	8	3-4	—	—	—	—	—	3	4	2	—	—	—	1	—	1	—	3	2	3	8	—	—	4	—	—	4	—
Stationary	+	—	+	+	+	+	+	+	+	+	—	—	—	—	—	—	—	+	+	+	—	—	—	+	—	—	—	—
Progressive	—	+	—	—	—	—	—	—	—	—	—	—	—	+	—	+	—	—	—	—	+	—	—	—	—	—	+	—
Heart enlarged	+	+	—	—	+	—	—	—	+	+	—	—	—	+	—	+	—	—	+	+	+	—	—	—	—	+	+	—
Diminution of heart sounds	+	+	+	—	—	+	+	—	—	+	+	—	—	+	—	+	—	+	+	—	+	—	—	+	—	—	—	+
Reduplication of heart sounds	—	—	—	—	—	—	—	—	—	+	—	—	—	—	—	—	—	—	—	—	+	—	—	—	—	—	—	—
Murmurs	SAB	—	—	SA	—	—	—	—	SB	—	—	SA	SA	SAB	—	SA	—	—	—	—	—	—	SA	—	—	SAB	—	—
Accentuation of aortic second sound	+	—	+	+	—	+	—	—	++	—	—	—	—	+	—	+	—	+	+	—	—	—	—	—	+	+	—	+
Regular rhythm	+	+	+	+	+	+	+	+	+	+	+	+	+	PB	—	+	+	+	+	+	+	—	+	+	+	+	+	+
Thickening of radials	+	—	+	+	—	+	—	—	+	+	+	+	—	+	—	+	—	+	+	+	+	—	—	—	—	+	—	+
Blood pressure																												
Systolic	170	204	160	126	156	136	158	140	131	116	124	150	160	120	140	137	100	116	148	135	149	160	122	162	120	146	190	145
Diastolic	92	106	97	86	86	72	80	72	62	76	90	90	98	60	80	78	62	70	90	80	70	85	74	91	60	60	120	75
Risk	*P*	*P*	G	G	G	G	G	G	P	P	G	G	G	P	G	P	G	G	P	G	P	G	G	G	G	G	P	G
Major operation	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Duration of operation	2	1	1	¾	2	1¼	1	1	1	1½	1	1¾	1½	1	2	¾	1½	1¼	1½	1	1¾	1¾	1¼	2½	½	1	1½	1¼
Condition at end of operation	G	G	G	G	G	G	G	G	G	F	G	G	G	P	G	G	G	G	F	G	G	G	G	G	G	G	G	G
Condition at discharge	G	G	G	G	G	G	G	G	G	D	G	G	G	G	G	D	G	G	G	G	D	G	G	G	G	G	G	G

* In this table, plus indicates yes; minus, no; G, good; F, fair; S, systolic; A, apex; B, base; D, died; PB, premature beats.

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[1] Pardee, H. E. B.: Clinical Aspects of the Electrocardiogram, New York, Paul B. Hoeber, 1924, pp. 152, 156, 157.

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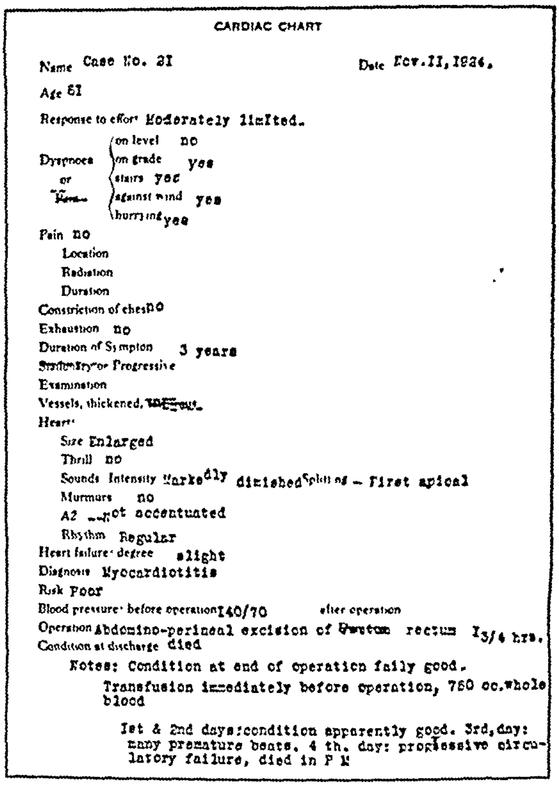

CARDIAC CHART

Name Case No. 21 Date Nov.11,1926.
Age 61
Response to effort Moderately limited.
Dyspnoea or
on level no
on grade yes
stairs yes
against wind yes
hurrying yes
Pain no
Location
Radiation
Duration
Constriction of chest no
Exhaustion no
Duration of Symptom 3 years
Stationary or Progressive
Examination
Vessels, thickened,
Heart:
Size Enlarged
Thrill no
Sounds Intensity Markedly dimished Splitting – First apical
Murmurs no
A2 not accentuated
Rhythm Regular
Heart failure: degree slight
Diagnosis Myocardiotitis
Risk Poor
Blood pressure: before operation 140/70 after operation
Operation Abdomino-perineal excision of rectum 1 3/4 hrs.
Condition at discharge died

Notes: Condition at end of operation faily good.
Transfusion immediately before operation, 750 cc. whole blood

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TABLE 1.—*Cardiovascular and Surgical Outcome* *

	Case																											
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Sex	M	F	M	M	M	M	M	F	M	M	M	F	M	M	F	M	F	M	M	F	M	F	F	F	F	F	F	M
Age	58	53	70	72	50	66	72	54	52	66	60	72	59	55	54	62	54	67	59	57	61	68	57	58	57	58	60	57
Dyspnea on effort	+	+	—	—	—	—	+	+	—	+	—	—	—	+	—	—	—	+	+	+	+	—	—	+	—	—	+	—
Retrosternal pain on effort	—	—	—	—	—	—	—	—	+	—	—	—	—	—	—	+	..	—	—	—	—	—	—	—	—	—	—	—
Precordial pain on effort	—	+	—	—	—	—	—	+	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	+	—
Duration of symptoms																												
In years	3	3-4	—	—	—	—	—	3	4	2	—	—	—	1	—	1	—	3	2	3	3	—	—	4	—	—	4	—
Stationary	+	—	+	+	+	+	+	+	+	+	—	—	—	—	—	—	—	+	+	+	—	—	—	+	—	—	—	—
Progressive	—	+	—	—	—	—	—	—	—	—	—	—	—	+	—	+	—	—	—	—	+	—	—	—	—	—	+	—
Heart enlarged	+	+	—	—	+	—	—	—	+	+	—	—	—	+	—	+	—	—	+	+	+	—	—	—	—	+	+	—
Diminution of heart sounds	+	+	+	—	—	+	+	—	—	+	+	—	—	+	—	+	—	+	+	—	+	—	—	+	—	—	—	+
Reduplication of heart sounds	—	—	—	—	—	—	—	—	—	+	—	—	—	—	—	—	—	—	—	—	+	—	—	—	—	—	—	—
Murmurs	SAB	—	—	SA	—	—	—	—	SB	—	—	SA	SA	SAB	—	SA	—	—	—	—	—	—	SA	—	—	SAB	—	—
Accentuation of aortic second sound	+	—	+	+	—	+	—	—	++	—	—	—	—	+	—	+	—	+	+	—	—	—	—	—	+	+	—	+
Regular rhythm	+	+	+	+	+	+	+	+	+	+	+	+	+	PB	—	+	+	+	+	+	+	—	+	+	+	+	+	+
Thickening of radials	+	—	+	+	—	+	—	—	+	+	+	+	—	+	—	+	—	+	+	+	+	—	—	—	—	+	—	+
Blood pressure																												
Systolic	170	204	160	126	156	136	158	140	131	116	124	150	160	120	140	137	100	116	148	135	149	160	122	162	120	146	190	145
Diastolic	92	106	97	86	89	72	80	72	62	76	90	90	98	60	80	78	62	70	90	80	70	85	74	91	60	60	120	75
Risk	P	P	G	G	G	G	G	G	P	P	G	G	G	P	G	P	G	G	P	G	P	G	G	G	G	G	P	G
Major operation	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Duration of operation	2	1	1	¾	2	1¼	1	1	1	1½	1	1¾	1½	1	2	¾	1½	1¼	1½	1	1¾	1¾	1¼	2½	½	1	1½	1¼
Condition at end of operation	G	G	G	G	G	G	G	G	G	F	G	G	G	P	G	G	G	G	F	G	G	G	G	G	G	G	G	G
Condition at discharge	G	G	G	G	G	G	G	G	G	D	G	G	G	G	G	D	G	G	G	G	D	G	G	G	G	G	G	G

* In this table, plus indicates yes; minus, no; G, good; F, fair; S, systolic; A, apex; B, base; D, died; PB, premature beats.

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[1] Pardee, H. E. B.: Clinical Aspects of the Electrocardiogram, New York, Paul B. Hoeber, 1924, pp. 152, 156, 157.

selves of information of considerable value in the diagnosis. . . . If the patient has the retrosternal pain coming on with exertion and relieved by rest, typical of disease of the coronary arteries, or has had a severe typical attack of angina pectoris, it is very common to find significant abnormalities of the ventricular wave. About 70 per cent of those patients will show one or more of the abnormalities mentioned, even though the heart is quite normal in size and free from murmurs; half of these have the special T wave peculiarity associated with coronary narrowing. . . . Of these patients who have cardiac enlargement and symptoms of circulatory insufficiency, the number showing abnormal electrocardiograms will be quite large. These have the diffuse myocardial degeneration from arterial narrowing or from multiple foci of low-grade infection within the muscle; and abnormal ventricular waves are found in about 85 per cent. They are often referred to as having 'cardiosclerosis.'"

Table 2.—*Summary of Table 1*

	Women	Men
No symptoms or signs	8	7
Mild symptoms and signs	2	2
Advanced symptoms and signs	3	6
Final outcome: Lived	13	12
Died	..	3
Operation curtailed	..	2

Table 3.—*Operations in Table 1*

	Case
Radical removal of breast	12, 26
Perineal prostatectomy	4, 7
Gastro-enterostomy	6-9, 14, 19, 28
Splenectomy	25
Repair of perineum and cervix	8
Bilateral inguinal herniotomy	13
Hysterectomy and removal of large ovarian cyst	2
Resection of sigmoid	1, 5
Perineorrhaphy, anterior colporrhaphy and abdominal for retrodisplacement of uterus	17
Resection of first portion of doudenum and gastro-enterostomy	15
	27
	3
	18
Appendectomy (ruptured) with abscess	20
Cholecystectomy and appendectomy	23
Cholecystotomy	16
Cholecystectomy and repair of ventral hernia	24
Plication lateral ligaments of rectum (laparotomy)	22
Removal of growth from rectum	11
Excision of rectum by abdominal perineal routes	10, 21

There is presented, in the accompanying tables, a series of cardiovascular appraisals assembled from the past year. The series includes only patients of 50 years of age and over on whom major operations were performed. No patient is included who was a poor risk as a result of a surgical condition; this excludes a large number of patients. Despite their paucity, analysis discloses a number of interesting facts.

All patients without symptoms or without signs referable to the cardiovascular system and therefore appraised as good risks, and all patients with mild symptoms and signs of circulatory insufficiency and therefore appraised as probably good risks, proved to be good risks.

Eight patients were appraised as poor risks. Of the men, three died; on two, operations were curtailed because of poor condition, and one did well. Of the women, two did well; no operations were curtailed and no patients died. Women seem better subjects than men. Subjective symptoms and objective signs in men referable to the cardiovascular system indicate an impairment of that system of a more serious nature than do the same symptoms and signs in women.

Anginal symptoms in women were mild, inconstant and secondary. One man (case 9) with syphilitic aortitis, moderately restricted in effort by retrosternal pain, did well. One man (case 16), markedly restricted in effort by retrosternal pain, died suddenly on the nineteenth day after operation, after a smooth and uneventful convalescence. Two men (cases 10 and 21), each moderately restricted in effort by dyspnea, without pain, with moderately enlarged hearts, marked diminution of intensity of the heart sounds, reduplication of the first apical sound, and subnormal blood pressures, died, one on the fourth day and the other on the fourteenth day.

Two patients developed, on the day following their operations, auricular fibrillation, which lasted two days and four days, respectively, on digitalis medication.

REPORT OF CASES

Case 16.—A banker, aged 63, with markedly limited response to effort, had retrosternal pain after five minutes' walking on the level, pain which came on when he walked against the wind, climbed a flight of stairs and on grades; he could not hurry. The pain did not radiate. There were no sensations of constriction of the chest and no exhaustion. For the past year pain always occurred on slight exertion, relieved by rest. Gas and urination were common during the attacks. The symptoms were progressive.

The patient was well nourished; the heart was enlarged, the left border almost to the anterior axillary line; the sounds were diminished in intensity at the apex and almost inaudible at the base, with a systolic blow at the apex; the rhythm was regular; the radials were thickened. The systolic blood pressure was 137; diastolic, 78. Because the patient's surgical condition was considered critical, a cholecystotomy was performed, in spite of his marked cardiac impairment. He had a smooth, uneventful convalescence. On the morning of the nineteenth day after operation, having finished breakfast, the patient stated that he never felt better; a few minutes later he complained of a queer feeling and suddenly died. No postmortem was obtained.

Sudden deaths are common in angina pectoris, but this patient did not die during an attack. In fact, he had been quite free from anginal pain for about a month, because he had been confined to bed. The exact mechanism of his death is unknown. In what degree the operation, nineteen days before, was contributory to his death is also a matter of conjecture. In dealing with such conditions, we are confronted by aspects of reality as yet beyond our powers of registration.

Case 10.—A traveling salesman, aged 66, somewhat overnourished, but who had lost 40 pounds (18 Kg.), had a response to effort moderately limited by dyspnea, which had been more marked during the past year. The heart was moderately enlarged; the sounds showed a marked diminution of the intensity, with reduplication of the first apical beat, but no murmurs; the rhythm was regular and the radials thickened. The systolic blood pressure was 116; diastolic, 76. The red blood cells numbered 3,980,000; the white cells, 7,500; the hemoglobin was 75 per cent. The blood chemical findings were normal. An excision of a carcinoma of the rectum, by the abdominoperineal route with colostomy, was done; the operation lasted one and one-half hours; a hypodermoclysis of physiologic sodium chloride solution was given during operation. Transfusion of 500 cc. of whole blood was done immediately after the operation, though the patient's condition was considered fairly good. Immediately after the operation and before transfusion the red blood cells numbered 3,800,000; the white blood cells, 12,000; hemoglobin, 78 per cent. I saw the patient four hours after the operation; the volume of the pulse was good, but not as good as it should have been, considering the transfusion; the patient slept under scopolamine-morphine anesthesia. Convalescence was smooth and uneventful up to the seventh day after operation. After a very restful night, at 7 a. m., he became suddenly dyspneic, and cold and clammy; the pulse was scarcely perceptible, and the heart sounds were muffled, though there was no pain; a half hour later he became unconscious and remained so for about half an hour. The internist diagnosed the attack as probably due to occlusion of a small coronary artery. After a few hours, the patient was more or less completely recovered, and the pulse and general condition apparently good again. He had several similar attacks on successive days, some of which followed colonic irrigations. On the twelfth postoperative day, there were signs of pneumonia at the right lower base. On the fourteenth day, the patient died. No postmortem was obtained.

It will be noted that this patient had an uneventful convalescence up to the seventh day following the operation. The exact cause and nature of his subsequent repeated attacks are unknown. The repetitions strongly implicate the heart as the offending organ. The strain of the operation was too great for the cardiovascular system. Transfusion was done immediately after the operation; less strain on the impaired heart would have been entailed had the patient been fortified by an additional transfusion before the operation, but his general appearance had been misleading. Whether the latter transfusion would have prevented the fatal termination is problematic, but it is believed that it would have done so.

Deaths of this nature are frequently classed as cardiovascular "accidents." It is believed, however, that such cases possess symptoms and signs which, appraised before the operation, will indicate the advisability or inadvisability of an operation.

SUPPORTING MEASURES IN CARDIOVASCULAR SURGERY

Success with the poor surgical risk depends in a large measure on the judicious management of this type of patient before, during and after opeartion. The advisability of transfusion before the operation is determined by the condition of the patient and the nature of the operation. A patient with a poor cardiovascular system, facing a long, severe operation, should have a transfusion done before the operation, even though there is little or no anemia present. The best results are obtained when the transfusion immediately precedes the operation. Transfusion after the operation in many of the poorer risks may also be necessary; an immediate transfusion is advised if the patient's condition is unsatisfactory. Treatment should begin before circulatory failure is at all pronounced.

Transfusion is the most effective method we possess to prevent and combat circulatory failure incident to surgical shock. Physiologists are practically agreed that the chief cause of circulatory failure in shock is the reduced volume of blood returned to the heart. The vascular system, to function properly, must contain at all times an adequate supply of fluid, and the best fluid is whole blood. The force of ventricular contraction is determined by the diastolic volume previous to contraction, provided marked changes in arterial resistance or alterations in inherent contractility of the heart are not produced.[2] Transfusion aids materially in maintaining a normal diastolic volume through adequate venous return and likewise prevents marked changes in arterial resistance. In the poor risks under consideration, it possibly minimizes any tendency, due to surgical shock, to alterations in inherent contractility.

A hypodermoclysis of physiologic sodium chloride solution sustains and prolongs the good effects of a transfusion given immediately before the operation; and when there is no preliminary transfusion, hypodermoclysis is even more urgently required.

It is also helpful with these patients to substitute a combination narcotic in place of the general anesthesia during the latter part of the operation. In the case of a laparotomy, such as gastric resection, the general anesthesia is continued with as low a level maintenance as possible until the resection begins. At this time morphine, from 1/6 to 1/4 grain (10 to 16 mg.), scopolamine, 1/200 grain (0.3 mg.) and atropine, 1/150 grain (0.4 mg.) are administered hypodermically. Five minutes later, the general anesthesia is discontinued and the operation completed, as a rule, without additional anesthesia. As a consequence, the strength of the patient is conserved.

Another essential in the management of the poor risk is absolute rest after the operation. The urgency of this is often not fully appreciated. Any exertion whatever immediately following a prolonged and severe operation on a patient with cardiac impairment may prove fatal. The return of consciousness in practically all patients is accompanied by movements of the arms and legs, at times sufficient to require moderate restraint. This exertion on the part of the patient may be prevented by administering hypodermically, fifteen or twenty minutes before the close of the operation, the medication mentioned in the previous paragraph. The patient passes into a deep sleep that lasts from four to six hours. Even transfusion after the operation fails to awaken him. Absolute rest is assured. This method has been frequently used during a number of years, with only favorable results. To continue the complete rest into the following day, one or two additional doses of morphine is all that is required in most instances.

Changing the position of the patient during the operation should be arranged, when possible, to occur in the beginning rather than at the end. For example, in an excision of the rectum for carcinoma by combined abdominal and perineal routes, it is well to begin with the perineal operation, in order that the change of position may occur early, when the patient is in relatively good condition.

Again, in transporting a patient from the operating room to the bed, no effort should be spared to give the least possible disturbance to him. These minor details are of the utmost importance to those of poor physical condition undergoing severe operations. Conservation of strength is a vital necessity.

SUMMARY AND CONCLUSIONS

1. All the patients without symptoms and without signs of cardiovascular impairment withstood the strain of a major operation.

2. All the patients with mild symptoms and signs of cardiovascular impairment also withstood the strain of a major operation.

3. Of six men with advanced symptoms and signs of cardiovascular impairment, three died; of two, operations were curtailed; one did well.

4. Two women with advanced symptoms and signs of cardiovascular impairment did well.

5. Transfusion of whole blood is the most effective method to prevent and combat surgical shock.

6. The hazard to patients with cardiovascular impairment undergoing long, severe operations is minimized by transfusion immediately before and after operation.

7. Complete mental and physical rest is insured by morphine, from 1/6 to 1/4 grain (10 to 16 mg.), scopolamine, 1/200 to 1/150 grain (0.3 to 0.4 mg.), atropine 1/150 grain, given before the patient leaves the operating room.

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[2] Wiggers, C. J.: Circulation in Health and Disease, ed. 2, Philadelphia, Lea & Febiger, 1923, pp. 111 and 598.

TUMORS OF THE CAUDA EQUINA

REPORT OF TWO CASES

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It is all too true that the diagnosis of tumors of the cauda equina has been made notoriously late in the course of the disease.

One who looks over the literature on this subject is struck by the fact that most of these patients have been treated for long periods for disturbances other than that from which they were suffering. The most common erroneous diagnoses include sciatica, rheumatism, gallbladder disease, appendicitis, neuritis, Pott's disease (case 1 in our series), lumbago and sacro-iliac disease (case 2).

Spiller and Frazier[1] found in their cases that the average duration of the disease before correct diagnosis was made was two and three-fifths years. Two of Cushing's[2] cases were "of many years' duration." Elsberg[3] reported a case of one and one-half years, while Hamill's[4] patient suffered for ten years before the correct diagnosis was made and proved.

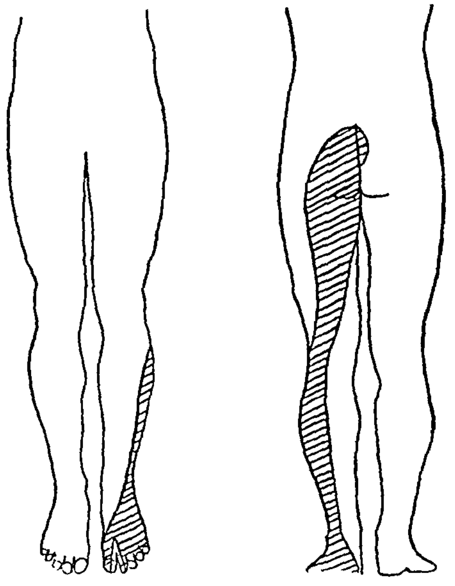

Fig 1 (case 1) —Front and back views of area affected by cauda equina tumor, in which there is loss of sensation to light, touch, pain and temperature (indicated by shading).

The apparent explanation of this delay between the onset and final correct diagnosis is that the symptoms and signs presented in the majority of these cases are obscure and indefinite. The usual case of caudal disease passes through a more or less rapid acute phase into a stage either intermittent, as regards symptoms, or chronic. Therefore, on the basis of their symptomatology, the localization of caudal lesions is not always easy, as, for instance, we see in contrast in the acute inflammatory or traumatic caudal lesions in which the clinical picture is clearcut. The taking of a careful history and frequent examinations for insignificant or evanescent physical signs might lead to early suspicion of caudal involvement.

The symptomatology of the acute caudal lesion is of the same type as that found in the chronic long-standing case. It might be well to refer here briefly to the work of Roussy and Lhermitte,[5] who have so clearly systematized caudal lesions after trauma. These writers say:

> The syndromes by which one interprets injuries of the roots or the nerves of the cauda equina manifest themselves in various ways, according to the height of the lesion, its extent or its depth, as is easily understood in view of the anatomic details presented above. Nevertheless, there is an entire series of signs common to the lesions of the cauda equina that serve to individualize them.[6]

They have divided the traumatic cases (and this really includes the acute nontraumatic case) into five main syndromes, each with its own symptomatology and clinical findings:

> 1. The total type syndrome, corresponding to high lesions beginning at the level of the second lumbar vertebra.
> 2. Middle type (lumbosacral) syndromes, corresponding to lesions in the region of the lumbosacral articulation (from the fifth lumbar to the first sacral vertebra).
> 3. The lower type syndrome, corresponding to lesions purely sacral.
> 4. The hemicaudal syndrome, in lesions affecting only half of the cauda.
> 5. The root type syndrome, in which few or many roots of the cauda are involved In this type a few of the lumbosacral roots are attacked alone or haphazard. The reader is referred to Roussy's succinct description of the foregoing syndromes.

One realizes that classifications as described above are inadequate, because syndromes in chronic cases only approximate those found in acute cases. Nevertheless, bearing this in mind, the interpretation of subjective and objective findings will suggest early caudal involvement of one of these types in most cases.

Once our suspicion is directed to the cauda, it is necessarily important to determine other data about the lesion. To do this, several methods of approach have been advocated.

Roentgen-ray examinations of the lumbosacral region and lumbar puncture in the early cases are usually negative.

Cushing and Ayer,[2] Mestrezat,[7] Spiller and Frazier,[1] Guillain[8] and many others have obtained below the lesions in later cases a yellow (xanthochromic) spinal fluid, poor in cellular content and rich in protein (Froin's syndrome). This type of fluid has always been considered indicative of a more or less complete spinal block above the site of puncture. Recently, however, Cushing and Ayer discovered that xanthochromia of less intensity also exists above the level of the lesion in some of their cases, as in case 1 of the present series. Thus, simple lumbar puncture has little localizing value.

A procedure of value in some cases is that used by Ayer and Mixter,[9] who established the presence of a spinal block by combined cistern-lumbar puncture. This procedure, like that of Queckenstadt, in itself has little localizing value.

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[1] Spiller, W. G, and Frazier, C H: Spinal Cord Tumor, Arch. Neurol & Psychiat 8: 455 (Nov) 1922

[2] Cushing, Harvey; and Ayer, J B · Xanthochromia and Increased Protein in Spinal Fluid Above Tumors of Cauda Equina, Arch. Neurol. & Psychiat 10: 167 (Aug) 1923

[3] Elsberg, C. A: Ann Surg 65: 268, 1917.

[4] Hamill, R. C: M Clin N. Amer. 5: 45 (July) 1921.

[5] Roussy, Gustave; and Lhermitte, Jean: Les blessures de la moelle et de la queue de cheval, Paris, Masson et cie, 1918

[6] "Les syndromes par lesquels se traduisent les blessures des racines ou des nerfs de la queue de cheval se presentent sous des aspects assez differents suivant la hauteur de la lesion, son étendue et sa profondeur, ce qui se concoit aisement, si on se rapporte aux notions anatomiques ci dessus exposees Néanmoins, il y a toute une série de signes communs aux lésions de la queue de cheval qui servent a les individualiser."

[7] Mestrezat Paris thesis, 1912

[8] Guillain, G: Rev. neurol. 1: 513 (May) 1924

[9] Ayer, J B, and Mixter, W. J.: Radiography Following the Injection of Iodipin into the Spinal Subarachnoid Space, Arch Neurol. & Psychiat. 11: 499 (April) 1924.

Certain French authors have found that, during lumbar puncture, even though the block is incomplete, injection of air in like amount for the spinal fluid withdrawn will produce root pains at the level of the lesion. We have no experience with this method.

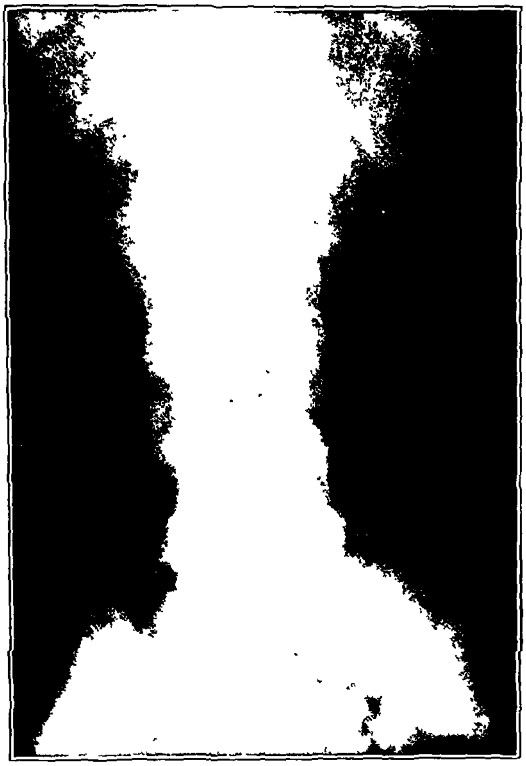

Fig. 2 (case 1).—Complete block of lower border of third lumbar vertebra, anteroposterior view.

After all, the most valuable accessory for accurately localizing spinal block lies in the introduction of from 2 to 3 cc. of lipiodol (iodized oil) into the cisterna magna by Sicard's[10] method. With the patient in a sitting posture, the oil rapidly passes into the spinal subarachnoid space and is checked at the level of the block, which can then be beautifully visualized by roentgen-ray examination with the patient in the erect posture (figs. 1 and 2).

During the last few months the two cases of caudal lesion described below have been diagnosed, and the patients operated on in the Stanford service of the San Francisco Hospital. These cases are of sufficient interest, we feel, to report, as they exemplify most of the foregoing comments.

REPORT OF CASES

Case 1.—F. B., an unmarried man, aged 27, entered the Stanford surgical service of the San Francisco Hospital, Dec. 28, 1925, complaining of an ulcer of the heel of the left foot. The familial and past history were essentially negative. The present illness began fifteen years previously, at the age of 12, when he was struck in the lumbar region with a baseball, following which he experienced rather sharp pains in the back, radiating down both legs. These pains would come on in the evening after he had played all day, but very little attention was paid to this complaint until about one year later, when it was noticed that he was getting "bow-legged." He then consulted a physician, who placed him on a Bradford frame for eight months with the diagnosis of Pott's disease. Then he was up in a wheel chair for several months, and for the following two years he walked with the aid of crutches, at the end of which time he was able to discard them. On being removed from the frame the patient noticed that the left leg was smaller than the right. Sensory changes began about two years after the accident, and when we saw him sensation was absent over the left buttocks, the posterior part of the thigh, and the outer surface of the left leg and foot. The patient felt that sensory loss had remained stationary for several years. Seven years previously, he had a resection of the left cuneiform, with a transplantation of the extensor hallucis longus to the cuboid.

He entered the hospital for an ulcer of the left heel received, October 1, about two months previously, when he rested his anesthetic foot on the exhaust pipe of a machine, sustaining a severe burn.

The patient was well developed and nourished. The general physical examination was negative. The neurologic examination showed the head and the cranial nerves and lobes of the brain normal. The upper extremities were normal. In the lower extremities, there was slight atrophy associated with weakness of both legs from the knees down, more marked on the left side; flexion and extension of the left ankle were limited; pronation and supination were practically absent on the left; extension of the great toe was absent on account of the tendon being cut. There was no paralysis, rigidity or contractures. There was absent sensation to pain, touch and temperature over the left buttock, the posterior part of the thigh and the outer surface of the leg and foot. Deep muscle sense and vibratory sensation were normal; i. e., the fourth and fifth lumbar and the first, second and third left sacral segments were affected (fig. 1). The rectal sphincter tone was poor. Muscular reflexes were: radial, biceps and triceps, present and equal; abdominals, present; cremasterics, absent; patellars, equal and slightly hyperactive; Achilles, absent on both sides; Oppenheim, Gordon and Babinski, absent. The lateral view of the roentgenogram of the lumbar and sacral vertebrae showed the disk between the fourth and fifth lumbar

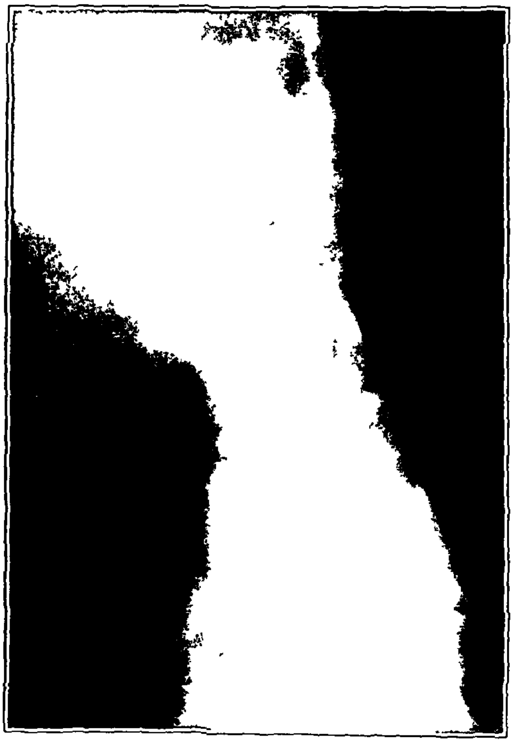

Fig. 3 (case 1).—Lateral view showing lobulation of obstruction.

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10. Sicard, J. A.: Rev. neurol. 4: 1264, 1921.

vertebrae intact. The articulation facets were obscured. There was a cystlike absorption of the posterior half of the bodies of the fourth and fifth lumbar vertebrae, as if from pressure rather than from a destructive new growth. The laminae were thin and hazy.

The blood Wassermann reaction was negative. Blood examination showed: hemoglobin, 90 per cent; leukocytes, 11,900; polymorphonuclears, 72 per cent; small lymphocytes, 24 per cent, and large lymphocytes, 4 per cent.

Spinal fluid could not be obtained by spinal puncture, but a cisternal puncture showed the fluid clear and colorless. No cells were present and the globulin was negative. The urine was normal.

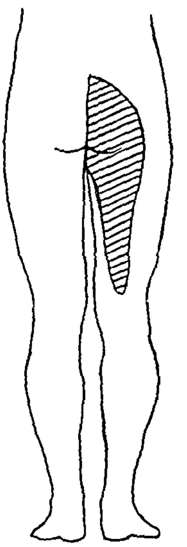

Fig 4 (case 2) — Back view of area affected by cauda equina tumor, in which there is loss of sensation to light, touch, pain and temperature.

Three cubic centimeters of lipiodol was injected following the cisternal puncture, and roentgenograms taken one hour, twenty-four hours, and forty-eight hours later showed that the lipiodol remained at the level of the lower border of the third lumbar vertebra, a small streak extending slightly lower on the left (figs. 2 and 3). The conclusion was: obstruction at the level of the third lumbar vertebra.

Laminectomy revealed a large solid tumor filling most of the spinal canal and lying dorsal to the fourth and fifth lumbar vertebrae. Section of the tumor showed it to be fibroma. Convalescence was uneventful, and the patient was discharged, Feb. 28, 1926.

Case 2.—G. S., a Greek waiter, aged 34, unmarried, entered the San Francisco Hospital, Nov. 25, 1925, in the Stanford surgical service, complaining of constipation and pain in the left lower abdominal quadrant and the buttocks. The familial history was negative; the past history was negative, except for a gonorrheal infection.

The present illness began about three and a half years previously, with dull aching pain in the lumbar region, occasionally radiating down both legs to the ankles; the pain was present only at night, waking the patient from a rather sound sleep, and would then increase in severity until he arose in the morning, when it would disappear during the day. After the first six months, pain was present both day and night, and had been slowly increasing in severity, more marked on the right side. At the onset, he complained of a burning pain in the perineum. During the last two and a half years, he had been suffering from rather marked constipation, requiring a laxative every evening. For the last six months he had had polyuria, with occasional periods in which he suffered from dysuria and slight incontinence. There was no impotence. Various diagnoses were made during this period, varying from sacro-iliac disease to colitis.

The patient was fairly well developed, but poorly nourished. General examination revealed a spastic contracted descending colon and gonococci on urethral smear.

Neurologic examination of the head, cranial nerves and the lobes of the brain was negative. In the upper and lower extremities, no paralysis, weakness, atrophies, hypertrophies, rigidity or contractures were present. Sensation to touch, pain and temperature over the right buttock and the posterior part of the thigh was absent; i. e., the areas supplied by the first, second and third sacral segments (fig. 4). There was no loss of deep muscle sense. Vibratory sensation was normal.

Muscular reflexes were: radial, biceps and triceps, present and equal; abdominals and cremasterics, present; patellas, present and equal; Achilles left, absent; right, present on reinforcement.

Roentgenograms of the lumbar and sacral spine showed that the sacrum had six segments. The lateral masses of the first segment had not united perfectly. There were hypertrophic fringes on some of the lumbar vertebrae. The lateral view of the lumbosacral articulation showed no evidence of spondylolisthesis. The top of the sacrum made an angle of 50 degrees with the fifth lumbar vertebra. On account of the lumbar lordosis, this made a weakness at this joint. There was a slight list of the spine to the right. The left pubis was slightly higher than the right. These findings suggested that there was a sacro-iliac slip.

The blood Wassermann reaction was negative. Slightly yellow spinal fluid, obtained by cisternal puncture, the spinal puncture being unsuccessful, gave: a negative Wassermann reaction; Noguchi reaction, plus; Nonne-Apelt, minus; Pandy, plus plus and a colloidal gold curve of 1111222200. The urine was normal. Nov. 4, 1925, about 3 cc. of lipiodol was injected, following a cisternal puncture, and a roentgenogram made later showed a complete block at the level of the third lumbar vertebra (figs. 4 and 5).

Laminectomy was done in two stages on account of the troublesome bleeding encountered. At the first operation, the laminae of the third, fourth and fifth lumbar vertebrae were removed. A very vascular tumor, the size of a cherry, was uncovered to the right of the cord at the level of the foramina between the fourth and fifth lumbar vertebrae. On removal of the posterior surface of the first and second sacral vertebrae, which was very thin, a mere bony shell, a cyst the size of a large walnut, which contained a clear, deep golden yellow fluid, was opened up. The nerve roots were seen running through the cyst. On account of the bleeding, it was thought advisable to do the operation in two stages. At the second operation the dura was opened and the tumor, an angioma, was approached from below, but uncontrollable bleeding was again encountered. Attempt at removing it had to be postponed. The patient is now receiving deep roentgen-ray therapy. Spinal fluid withdrawn above the tumor at the time of the second operation was quite yellow.

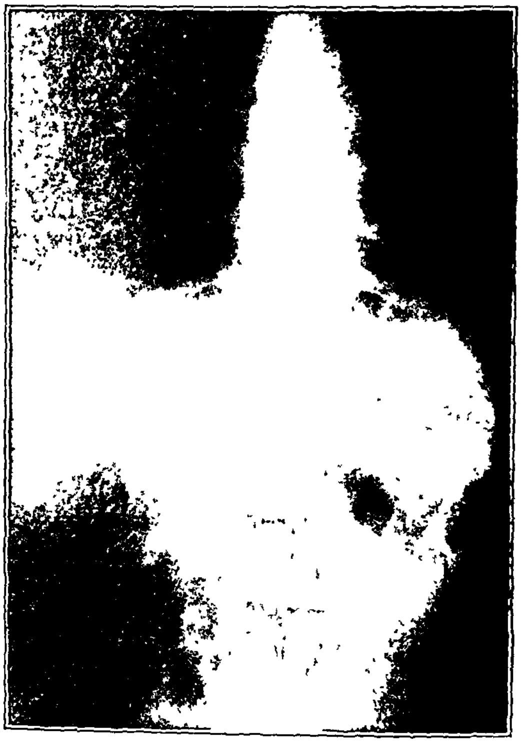

Fig. 5 (case 2).—Injected lipiodol arrested at level of third lumbar veretebra.

COMMENT

These two cases of cauda equina tumors are illustrations of delayed and incorrect early diagnosis.

Patient 1, treated for Pott's disease, suffered for thirteen years before a correct diagnosis was made. His subjective symptoms, most of this time, pointed to caudal disease, and future diagnoses were most probably colored by the previous erroneous diagnosis.

Patient 2 presented a suggestive caudal lesion: burning pains in the perineum, radiating pains, increased by recumbent posture and relieved by walking, and severe constipation, which was absent before the present illness. This is a suggestive and important triad of caudal symptoms, which our patient presented for about two and one-half years. Two of these symptoms were present three and one-half years.

1. Both patients presented few positive neurologic findings.

2. The diagnosis of caudal lesion was made preoperatively in each case and confirmed by the intrathecal use of lipiodol, which accurately localized the upper level of the lesion.

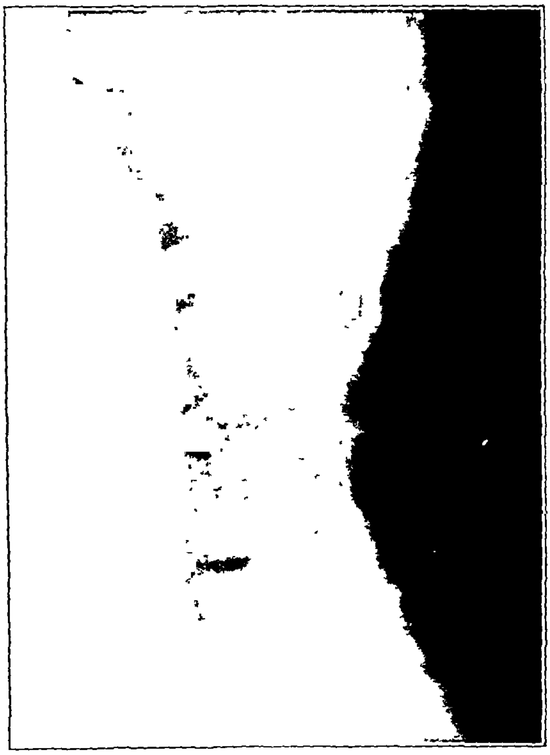

Fig. 6 (case 2).—Lateral view.

3. Both these cases conformed, in a general way, to type 2 (middle type syndrome of Roussy and Lhermitte).

4. In case 2, xanthochromic spinal fluid was found below the tumor at operation, and above the tumor even as high as the cisterna magna. This confirms the discovery of Cushing and Ayer.

5. In our cases, Queckenstadt's and Ayer's tests could not be performed, because of the presence of the tumor in the lower lumbar region which prevented lumbar puncture.

CONCLUSIONS

1. Lesions of the cauda equina are more common than supposed.

2. If one keeps in mind the possibility of caudal lesion as the cause of symptoms, systematic examination will result in earlier correct diagnosis in these cases.

3. Lipiodol injected intrathecally has been found by us to be innocuous. It was a valuable adjunct in these cases, not only in confirming the diagnosis, but, what is more important, in localizing the level of the lesion.

ROENTGENOGRAPHY AND THERAPY WITH IODIZED OILS*

W. T. BELFIELD, M.D.
AND
H. C. ROLNICK, M.D.
CHICAGO

Two proprietary iodine-oil compounds, lipiodol and iodipin, extensively used in recent years for roentgenography and therapy, are now known to produce two harmful effects which restrict their usefulness: first, because, virtually nonabsorbable, they may remain in the tissues for indefinite periods, for two years in one instance: and, second, they may cause by prolonged contact irritation and cicatrix formation.[1]

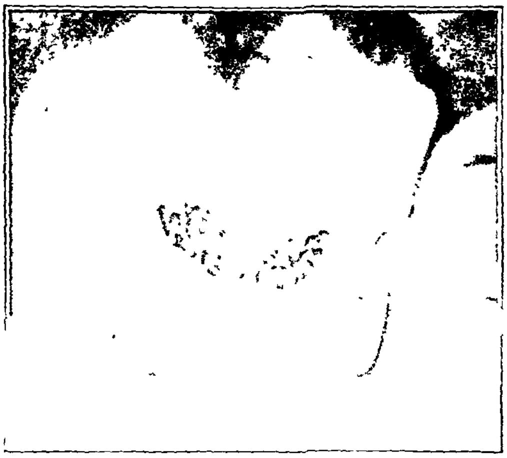

Fig. 1—Normal vasa and vesicles filled with iodized oil through vasotomy; the vesicle fills before the fluid passes out through the ejaculatory duct, this we have observed through the fluoroscope also. Hence the vesicle must be considered a reservoir for spermatozoa.

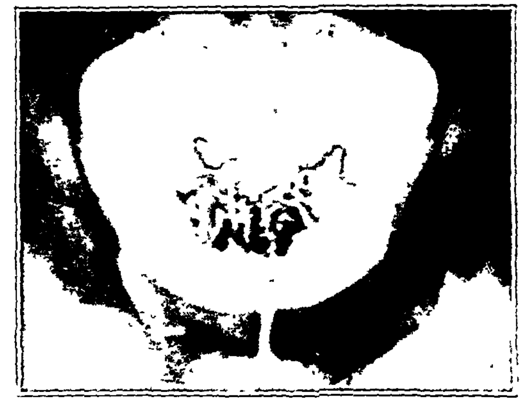

Fig. 2—Both vasa redundant, kinked and uniting into a single ampulla; both vesicles filled by vasotomy without escape of oil into ejaculatory ducts.

We have studied the therapeutic effects of these and other iodized oils after injection into the seminal ducts through vasotomy, usually bilateral, in sixty-seven men, with immediate roentgenograms in all; the viscosity of lipiodol and iodipin renders the filling of the vesicles difficult and at times incomplete (fig. 3). The failure of absorption, observed by others in various tissues, is shown in the persistence of lipiodol in the vesicles and in the connective tissue at the internal inguinal ring (Bogros' space), into which it was intentionally injected by way of the sheath of the scrotal vas (fig. 5).

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* Roentgenograms by L. S. Tichy, St. Anthony's Hospital.

[1] Maclaire, A. S.: Am. J. M. Sc. **170:** 874 (Dec.) 1925. Sharpe, W., and Peterson, C. A.: Ann. Surg. **83:** 32 (Jan.) 1926. Sicard and Forestier, quoted by Maclaire. Mixter, W. J.: Use of Lipiodol in Tumor of Spinal Cord, Arch. Neurol. & Psychiat. **14:** 35 (July) 1925. Lichtwitz, O.: Wien. klin. Wchnschr. **39:** 133 (Jan. 28) 1926

Iodipin and lipiodol are said by their respective makers to contain unnamed iodine compounds in vegetable oils. Since animal oils are more readily absorbed,[2] we have dissolved iodine and various of its compounds in each of several animal oils and have injected these into the vesicles. Our prime object was therapeutic efficacy with harmlessness, which properties we have found in several solutions, notably two:

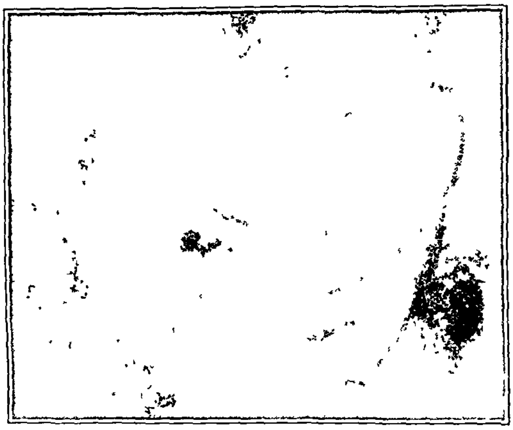

Fig 3—Right, silver wire passed into vas through vasotomy, arrested by kink in vas, left, vas and vesicle incompletely filled.

Iodol, 10 Gm., in cod liver oil, 40 cc. Of this, iodine constitutes more than 18 per cent by weight.

Thymol iodide, 10 Gm, in 30 cc. of cod liver oil. The iodine content of this is about 12 per cent. Either solution is prepared by stirring together the two ingredients.

Either liquid clears the vesicles of gonococci and of the pyogenic bacteria commonly found in them. They are sufficiently fluid to fill the vesicles without undue pressure. They are absorbable and do not produce cicatrix formation. Hence their use nullifies the only criticism of vasotomy; namely, the possible occlusion of the vas at the site of injection through perivasal cicatrix formation. We now frequently use iodized oil for vasotomy instead of collargol solutions.

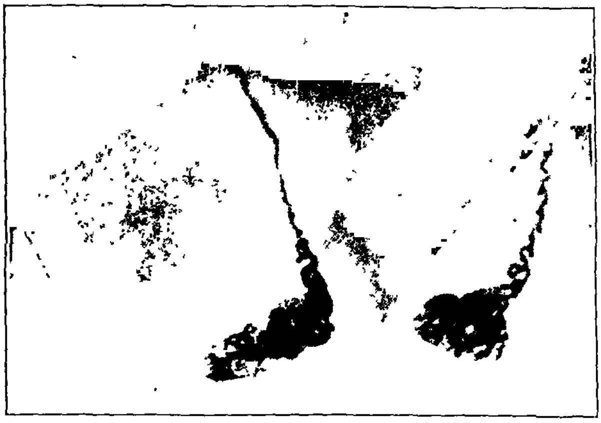

Fig. 4.—Iodized oil forcibly injected downward in living subject through vasotomy fails to pass beyond the tail of the epididymis; no pain during injection nor irritation afterward.

It is known that disease conditions of the deep urethra, such as chronic infection or stricture, may be accompanied with such atony of the ejaculatory ducts as to permit the entrance of the urine into the vesicles during urination;[3] there sometimes results the constant presence in the vesicles of urinary salts, including triple phosphate crystals and urates. We have in such cases injected from the meatus into the bladder medicaments which the patient then voids while the urethra is compressed. For this method of treating the deep urethra and vesicles, the iodized oils are especially adapted; for should they pass from vesicle into vas—which Rolnick[4] has shown seldom happens—they go no farther than the tail of the epididymis, where they produce neither present pain nor subsequent irritation (fig. 4).

The iodol-oil mixture gives a fair roentgenographic shadow of the vesicles (fig. 1), less dense than that furnished by the customary collargol 10 per cent solution, or by lipiodol. We have not used it elsewhere; but since roentgenograms of the vesicles are unusually elusive—for example, a 20 per cent solution of sodium iodide or a 10 per cent solution of sodium tetraiodophenolphthalein, injected into the vesicles gives no distinct shadow—it is possible that these iodized oils may be found useful in other fields as harmless and inexpensive substitutes for lipiodol and iodipin.

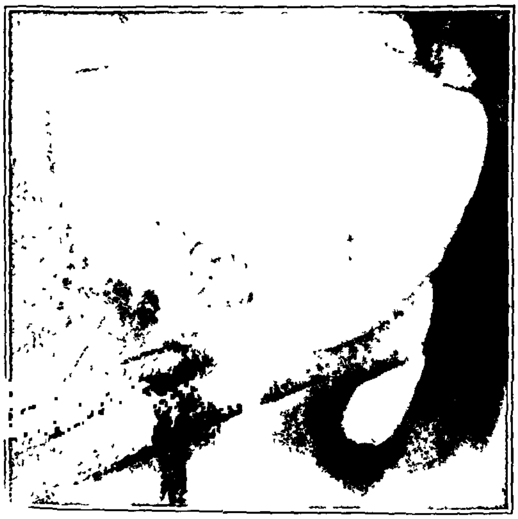

Fig. 5—Persistence of lipiodol in Bogros' space (*A*) and vesicles thirty-seven days after injection; the oil injected toward the body within the sheath of the scrotal vas diffused through Bogros' space but did not enter sheath of pelvic vas.

INDUSTRIAL HERNIA

Attention is called to the clinical importance of Bogros' space, especially to industrial surgeons. The sheath of the intrapelvic vas is usually not continuous with the sheath of the scrotal vas.[5] Each segment ends in the intervening loose connective tissue at the internal inguinal ring, Bogros' space (fig. 5); hence infections traversing the sheath of the vas from the vesicles diffuse into this space, causing tender swellings, even suppuration, at the internal ring, which simulate hernia. Although a description of such imitation hernias incidental to pelvic infections was published a half century ago by Hutchinson,[6] and by others[7] subsequently, it has received scant attention from surgeons or urologists. Yet the need for this knowledge is now more urgent than ever before because of recent legislation requiring compensation for industrial injuries, which has produced a large crop of pseudo "industrial hernias." Many of these have been recognized by urologists as infections that have traversed the vas to Bogros' space from the vesicles; and many such industrial hernias have been cured by treatment of the infected vesicles.[8] Wesson,[9] as consultant in industrial insurance, personally observed in two years forty-seven instances in which traumatic hernia had been diagnosed, and in many of which herniotomy had been advised. In only one was hernia found; in all there was a tender swelling about the internal inguinal ring, and in all there was pus in the vesicles. Treatment of these infected organs abolished the pseudohernia in many instances.

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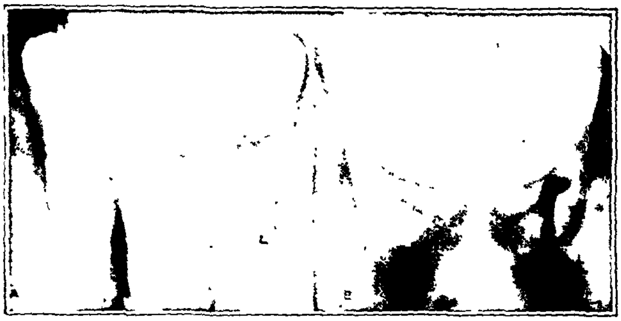

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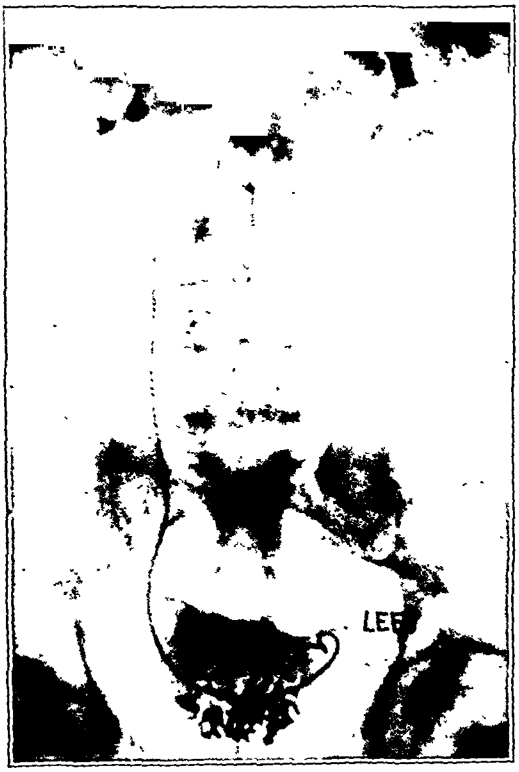

Fig. 7.—Relation of vasa and vesicles (filled with iodized oil) to ureters; catheter in right ureter; sodium iodide, 15 per cent, in left ureter and pelvis.

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31 North State Street.

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[6] Hutchinson, J.: M. Times & Gaz., April, 1871, p. 447.

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[8] Guiteras (footnote 7, second reference).

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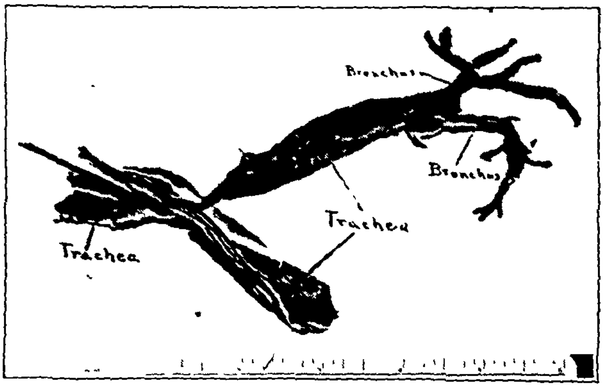
Clinical Notes, Suggestions and New Instruments

DIPHTHERITIC CAST OF BRONCHIAL TREE*

Perry A. Bly, M.D., Rochester, N. Y.

A woman, aged 34, was admitted to the Rochester Municipal Hospital on the sixth or seventh day of illness with a clinical diagnosis of laryngeal diphtheria.



Diphtheritic cast of bronchial tree.

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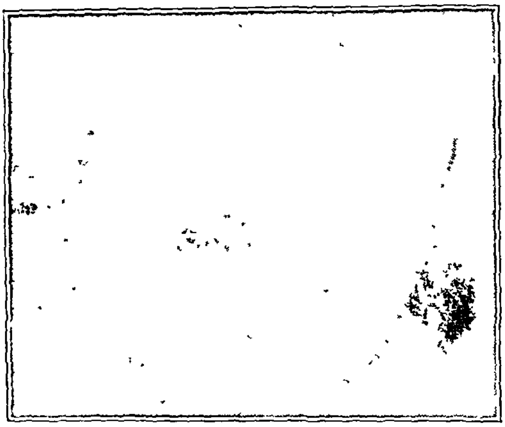

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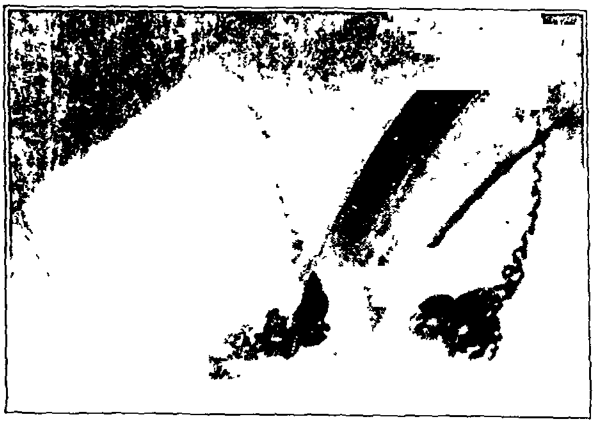

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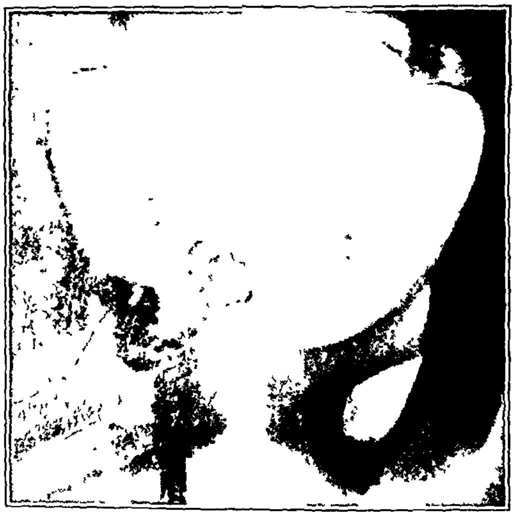

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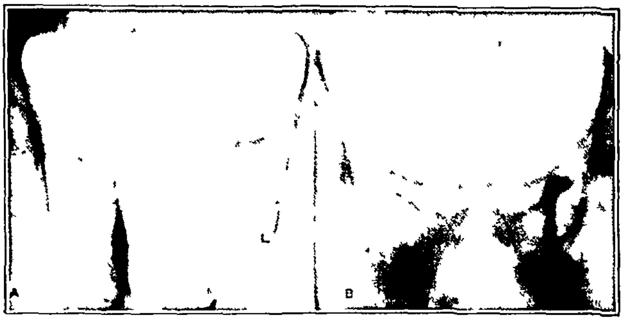

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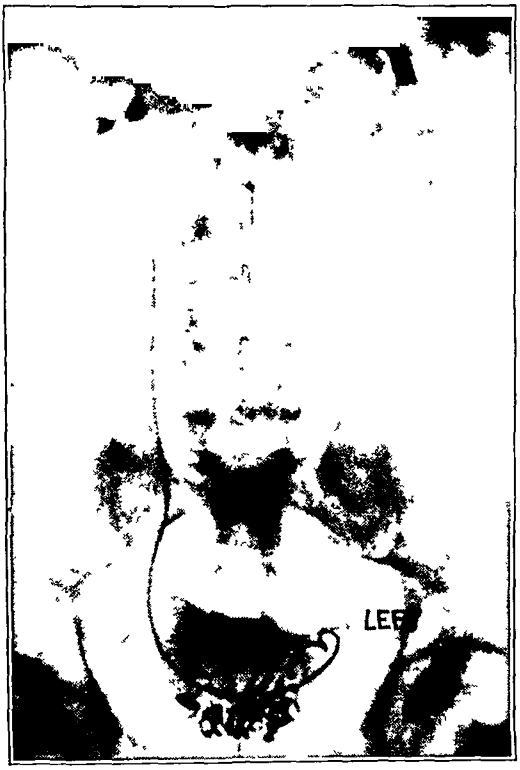

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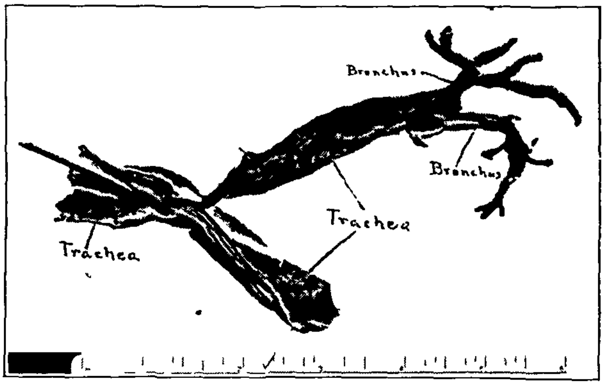

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Mrs. W. B, aged 71, was extremely weak and decrepit, and it was highly desirable to make a definite diagnosis of the renal condition. At cystoscopy, January 19, on the left, the catheter passed readily, but on the right side it was obstructed within an inch of the lower orifice Several different sizes and kinds of catheter were used successively, but nothing could be made to go farther than the one inch Holding this in place as best we could, 12 per cent sodium iodide solution was injected and a roentgenogram taken which gave us a at least to the situation, as shown in figure 1. The kidney evidently was down in the *pelvis leading to tortuosity* and angulation of the ureter to such a degree that it could not be threaded with the catheter; and the catheter was obstructed so low down in the ureter that the fluid could not be made to go through the full length of the channel. It occurred to us that if we could elevate the pelvis of the patient, and manipulate and push upward into the abdomen the involved right kidney, it might straighten out the ureter enough to permit the transit through it of the catheter. This was tried out, January 22, and it proved successful. While the kidney was maintained at as high a level as possible, the ureteral catheter was gradually pushed upward, meeting with, but by successive manipulations passing, the several angulations *shown in both figures* 1 and 2, and finally reaching the neighborhood of the kidney pelvis; after which the sodium iodide solution was successfully injected and a good roentgen-ray demonstration was attained. This showed a pyonephrotic kidney on the right side situated almost within the pelvis, and a tortuous and angulated ureter throughout.

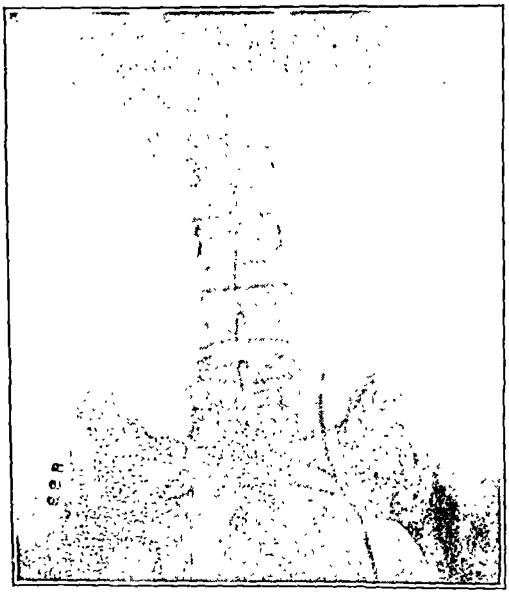

Fig. 1.—Marked tortuosity and sharp angulation of right ureter, preventing the passage of a catheter and permitting only partial injection for a ureterogram, with no pyelogram evident.

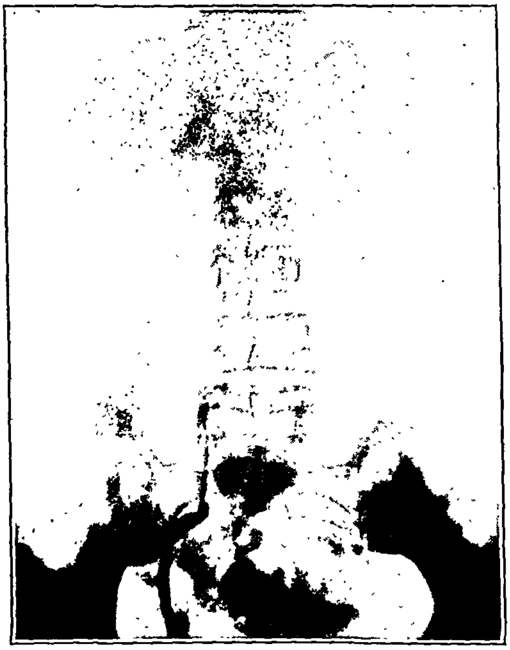

Fig. 2.—The right ureter, less kinked and tortuous, permits the ascent of the catheter (which is seen within the ureter). Ureterogram and pyelogram (*A*) show size and course of ureter and location of dilated kidney pelvis.

The lesson to be deduced from this case is the success of straightening out the ureteral channel by the maneuver described for the purpose of permitting the passage of the ureteral catheter for either diagnostic or therapeutic purposes.

550 Century Building.

DEFORMITY OF THE AIR BUBBLE OF THE STOMACH IN CARCINOMA *

Jacob Buckstein, M.D., New York
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In a fluoroscopic survey of the abdomen, an important factor that may be overlooked is the appearance of the magenblase, or air bubble of the stomach. The normal air bubble (fig. 1) has a wide variation as to size and shape, but all agree in the absence of any irregularity in contour. By a careful inspection of this region, irregularities due to the projection within it of an infiltrative mass may be noted, and a diagnosis of carcinoma of this region made, even prior to the administration of a barium meal. The barium, however, by coating the mass, may bring it into clearer relief.

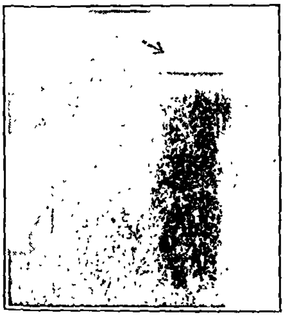

Fig. 1.—Appearance of normal air bubble of stomach, indicated by arrow.

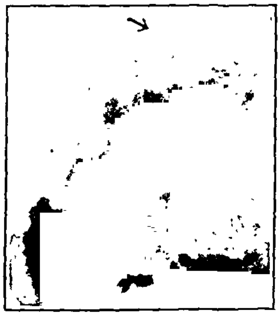

Fig. 2.—Deformity due to projection within bubble of a mass, making the base convex.

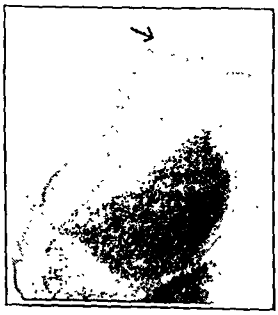

Fig. 3.—Deformity due to projection of irregular mass; base of bubble irregular.

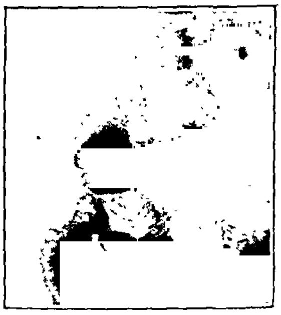

Fig. 4.—Extreme deformity, almost total disappearance, of bubble, because of an irregular infiltrative mass.

In order to emphasize the *significance of the deformed* bubble, I am including the roentgenograms of three cases of operatively demonstrated carcinoma of the cardiac zone of the stomach. These cases represent various degrees in deformity, from the crescentic deformity of the base, due to the invading mass, as noted in figure 2, to the almost total obliteration of this region, noted in figure 4.

1 West Eighty-Fifth Street.

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* From the radiographic department, Bellevue Hospital, Dr. I. Seth Hirsch, director.

A CORNEAL SHIELD*

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Rochester, Minn.

Following division of the sensory root of the gasserian ganglion for the relief of trigeminal neuralgia, a subsequent anesthesia remains over the skin, the cornea and the conjunctiva supplied by the trigeminal nerve. This anesthesia is a sequela that the patient must accept in lieu of the excruciating pain that is associated with the disease. The anesthesia is not of any particular significance except in the cornea, where it allows the entrance of foreign bodies into the eye and the consequent abrasion of the cornea without the patient's knowledge. Injuries of this kind are extremely serious, since postoperative corneal ulcers heal slowly and often fail to respond to the usual treatment; they may result even in serious opacities of the cornea and finally in loss of vision. Hence, it is highly imperative that the patient protect the cornea, on the side operated on. For this purpose, a special corneal shield has been devised.

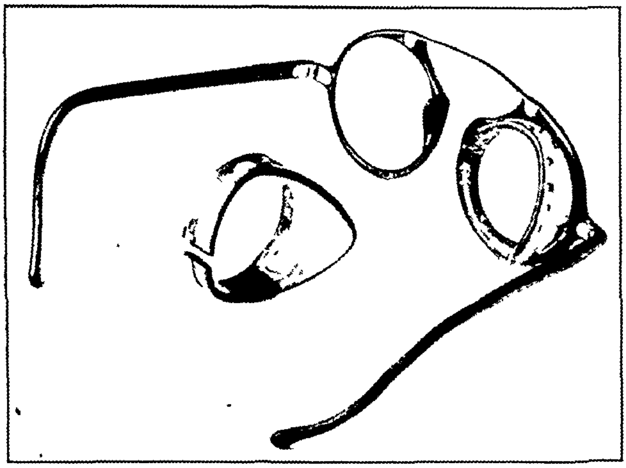

Fig. 1.—Eye cup of the corneal shield, which is constructed of zylonite and may be molded or ground to fit any orbit; a metal band holds the lenses securely in place; the cup is 42 mm. in diameter, and will fit any standard 42 mm. frame.

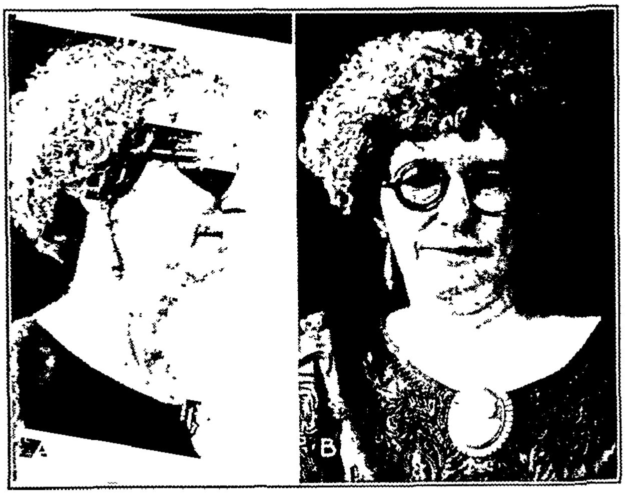

Fig. 2.—*A*, Lateral view of corneal shield and frame. The cup is fitted to a specially constructed frame. This type of frame is recommended, since it fits more satisfactorily than the saddle-bridge frame, and can be worn with greater comfort; *B*, corneal shield in place in frame adjusted to a patient who previously had an operation for trigeminal neuralgia.

The corneal shield possesses the merit of excellent protection to the cornea, and can be made to fit any substantial frame. It can be ground or molded to fit any orbit, and carries any lens that may be required for refractive errors. It is made of crystal and zylonite, is more or less inconspicuous, and is light enough to avoid pressure on the cheek. Therefore, it is ideal for patients who have been subjected to the operation on the gasserian ganglion or division of a sensory root; it may also be used for glasses for persons who wish protection for the eye against the entrance of foreign bodies.

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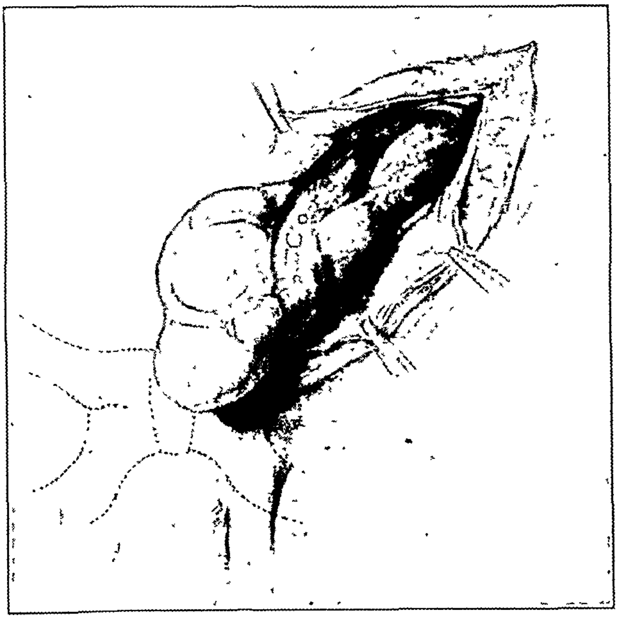
* From the Mayo Clinic.

PARAFFIN IN SAC OF INGUINAL HERNIA*

Edmund Andrews, M.D., Chicago

P. C., a man, aged 49, entered the hospital with the diagnosis of inguinal hernia. He was not a suitable subject for surgery on account of advanced arteriorenal disease. However, in the right groin was an irregular mass measuring about 5 by 12 cm. It was largest at its medial end, where it lay anterior to the pubis. At the lower end it was freely movable but seemed to enter the inguinal canal, where it tapered off and was lost in the deeper structures at the level of the internal ring. It was sharply defined, lobulated, not in the least tender to touch, and caused no discomfort. It did not give any impulse on coughing or straining. Gradual firm pressure could mold this mass into varying shapes.



Hernial sac distended with paraffin; cord in groove in mass; sac entirely free from surrounding structures.

The patient said that fourteen years before he had had a hernia on the right side and that some physician had injected it with paraffin causing this lump. Since then he had had no difficulty whatever. It was felt, therefore, that there was a very real danger of malignant changes and that the paraffin should be removed.

When the canal was opened, I was surprised to find that there were no adhesions. The needle had evidently entered the empty hernial sac and distended it. This distended sac lay exactly as free as any other hernial sac, and it was very easily freed by blunt dissection up to its neck. As shown in the illustration, the cord lay in a groove in the wax. The paraffin filled the sac up to its opening into the abdomen, and it was with considerable difficulty that I could reach the empty part. The hernia was closed without any difficulty in the usual manner.

The interesting points in this case are, first, that it was possible by such means to produce a cure of a hernia which was described as being quite large. The dangers of such a procedure are evident. In the first place, one could not insert the needle into the lumen of the sac one time in twenty. If the sac had not been empty, serious complications would inevitably have resulted. Second, this foreign substance lay inert in the tissues for fourteen years without giving rise to any disturbance. Paraffin injections as a rule run a very different course. The material breaks up into small droplets, which spread through the tissues, causing enormous scar tissue production, which is exceedingly liable to malignant changes. That such was not the case here may perhaps be attributed to the fact that it lay within a synovial sac which was able to maintain its integrity and prevent these untoward sequelae.

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* From the Department of Surgery, University of Illinois College of Medicine.

122 South Michigan Avenue

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1769)

ENEMAS

Rectal injections, also known as enemas, clysters or lavements, may be large or small; either may be given high or low. An enema of less than half a liter might be considered a small enema; of more than half a liter, a large enema. When a rectal injection is given by means of a syringe with a short tip, it is deposited just within the sphincter of the anus, and is then known as a low enema. A high enema is given with a soft rubber tube (colon tube) introduced as high up in the rectum as possible, but not more than from 4 to 6 inches. The lower part of the rectum, where the short tip deposits the injection, is normally very intolerant of distention, which is responsible for the prompt evacuation of any fecal matter that arrives in this part of the bowel. For this reason, even a small enema, when given low, may cause evacuation. The upper part of the rectum, which is reached by the high enema, is more retentive as well as more absorptive.

Retention Enemas.—It is always well to precede a retention enema by a cleansing enema, so as to unload the lower bowel of fecal matter that may be contained in it, thereby lessening distention and favoring retention. After this cleansing of the lower bowel, one should wait for at least an hour before introducing the retention enema to permit the excitation caused by the evacuant enema to subside. It is furthermore desirable to make a retention enema as small in bulk as possible. A low retention enema should not be larger than 100 cc. in bulk, not more than from 30 to 60 cc., if possible; and "micro-enemas," rectal injections of very small bulk (from 15 to 30 cc.), are still better. While, other things being equal, the smaller in bulk the enema the better, to be retained, enemas must be quite devoid of irritating properties. Hence, unless the solution can be rendered unirritating within the limits of the bulk that can be retained when given low, the high technic will have to be resorted to. Thus given, less than 300 cc. can usually be retained voluntarily as long as desirable. The retention of an irritative substance may be favored by making its solution as nearly isotonic as possible, and by using colloidal fluid, such as starch water (1 per cent). If the fluid is introduced very slowly and steadily, the rectum does not become as readily aware of the distention, and retains a quantity of fluid that would otherwise be expelled. Giving the enema at the body temperature favors retention, as extremes of temperature excite peristalsis. Roentgen-ray examinations have shown that position, provided the patient is recumbent, has little to do with favoring the inflow of the enema, unless the knee-chest position is employed. The patient should be instructed to indicate by a sign—such as the raising of a finger—when he has the sensation that he could not hold any more. It is then usually best not to attempt to introduce more; and, if the quantity injected was quite insufficient for the purpose intended, to repeat the procedure in an hour or two. When the nozzle of the syringe is withdrawn, a napkin may be pressed against the anus. The patient should occupy the recumbent position for at least an hour after the injection, and should be instructed to resist any inclination to evacuation as much as possible.

The most practical apparatus for the hands of the untrained, by means of which to give such injections to infants and children, is a somewhat pear shaped soft rubber "ear syringe." One of soft rubber is better than one with a hard rubber tip, for the latter might inadvertently injure the little one, should it jerk suddenly and unexpectedly. These syringes hold about a wineglassful of fluid, which is as much as or more than should be injected at one time in an infant. During the injection, the bulb should be squeezed as slowly and gently as possible. If the syringeful is not retained, the next hour half the quantity might be introduced. The enemas are repeated at two hourly or even hourly intervals in accordance with the amount retained at each injection. In this manner 20 cc. of fluid an hour may generally be introduced into the system of infants, an income of considerable value in conditions of water starvation present or threatening, as in cases of obstinate vomiting and profuse sweating or when, because of painful deglutition or nasal obstruction, the infant does not take fluid as well as it should. Sometimes the giving of nasty medicines may so prejudice the infant—and the tendency to prejudice is the greater the lower the mentality—against any fluid administered that it even refuses food and drink. In such cases, rectal administration of food and fluid may have to be resorted to for a while. The difficulty might have been avoided altogether, if the medicine had, in the first place, been given by the bowel, which when the technic detailed above is employed, is many times easier than getting the medicine swallowed. When acidosis is either present or threatened, the addition of 2 per cent of sodium bicarbonate is probably of advantage and of 10 to 20 per cent of commercial glucose [59] ("corn syrup") still more important.

For the adult a medium sized soft rubber catheter fitted to the barrel of a glass syringe (whose piston has been removed), to serve as a funnel, is probably the safest means of administering such injections, in the hands of the untrained, as with this equipment an excess of pressure cannot be produced. A common cause of failure of retention is the use of a "fountain syringe" or similar irrigator hung so high as to deliver the fluid at so excessive a rate and pressure that it is rejected quite as fast as it is squirted in. In the adult there should be no difficulty in having 50 cc. of fluid retained every two hours, and more if necessary.

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* This is the twenty-fourth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

[59] It would be well if the term dextrose were employed whenever the pure d glucose, now official, is desired, and the word glucose used for the syrupy mixture on the market.

It seems that this method of intermittent introduction of fluid is superior to the once popular continuous drip method of administration, which requires the constant presence in the bowel of a tube, which becomes irksome to the patient and demands so much care and attention on the part of the attendants as to make it quite unpopular with the nurses. Nevertheless, as this method may be of value in cases in which maximal quantities of fluid are to be introduced, the following quotation from its originator, John B. Murphy,[60] who perfected it for the treatment of perforative peritonitis, will have to suffice as directions for the technic. By means of it, it is reported, as much as 30 pints of physiologic sodium chloride solution has been administered in twenty-four hours to a child 11 years old and it was all retained.

> The fluid should be administered through a fountain syringe to which is attached a three-eighths inch rubber hose fitted with a hard rubber or glass vaginal douche tip with multiple openings. This tube should be flexed almost to right angles 3 inches from its tip. A straight tube must not be used, as the tip produces pressure on the posterior wall of the rectum when the patient is in the Fowler position. The tube is inserted into the rectum to the flexion angle and secured in place by adhesive strips binding it to the side of the thigh so that it cannot come out; the rubber tubing is passed under the bedding to the head or foot of the bed, to which the fountain is attached. It should be suspended from 6 to 14 inches above the level of the buttocks and raised or lowered to just overbalance hydrostatically the intra-abdominal pressure; i. e., it must be just high enough to require from forty to sixty minutes for 1½ pints to flow in, the usual quantity given every two hours. The flow must be controlled by gravity alone and never by a forceps or constriction on the tube, so that, when the patient endeavors to void flatus or strains, the fluid can rapidly flow back into the can, otherwise it will be discharged in the bed. It is this ease of flow to and from the bowel that insures against overdistention and expulsion onto the linen. The fountain had better be a glass or graded can, so that the flow can be estimated. The temperature of the water in the fountain can be maintained at 100 degrees by encasement in hot-water bags [or by partial immersion of an electric light globe]. The fountain is refilled every two hours with 1½ to 2 pints of solution. The tube should not be removed from the rectum for two or three days. When the nurse complains that the solution is not being retained, it is certain it is not being properly given; even children tolerate proctoclysis surprisingly well.

The author believed that, next to a conservative technic of the operative procedure, proctoclysis is second in importance as a life saver in perforative peritonitis.

McClanahan[61] describes a modification of this method that he considers practically fool-proof. The apparatus consists merely of an irrigating can and a rectal tube with the end cut off. The can rests on a small table at the bedside at about the level of the patient's rectum, and care should be taken at all times that the top of the level of the fluid in the can is not more than 4 inches above the level of the rectum of the patient. The rectal tube extends from the can, under the bedclothes, into the rectum of the patient. No regulation of flow is needed, as a constant to and fro communication is maintained between the large bowel and the container at the bedside.

Nutrient Enemas.—These are employed when it is impossible or undesirable to introduce food into the stomach, or when it cannot be retained. As the colon has practically no digestive capacity, and fat is practically not absorbed from it, the use of milk, egg or meat is irrational, and to "predigest" them unnecessarily troublesome. Dextrin or dextrose, albumose-peptone, and alcohol are the nutrients to be used. As dextrose is isotonic in from 5.2 to 5.4 per cent solution, and it is better, when adding it to sodium chloride solution, to adjust the total osmotic tension to the physiologic by taking half of each, as 27 Gm. of dextrose and 4.5 Gm. of sodium chloride to 1,000 cc. of water, it will be seen that the amount of carbohydrate that can thus be introduced is rather small. Dextrin, on the other hand, is colloidal and nonirritating, while easily converted into dextrose by the ever present diastase. Hence from 10 to 15 per cent of dextrin might be employed, giving us two or three times the nutritive value of dextrose enemas. As dextrin has no osmotic pressure, the addition of salt to produce isotonicity is required. Albumose-peptone, such as Witte peptone, may be added to enemas in quantities of from 5 to 10 and even 20 per cent; and it has been shown that the presence of salt in small quantity favors its absorption. The quantity of alcohol employed should not exceed 3 per cent.

The following general rules on the administration of nutrient enemas may be of value:

Not more than three nutrient enemas should be given in the twenty-four hours, at about eight hour intervals. The amount should at first not exceed 150 cc., to be gradually increased to 300 when given as ordinary enemas, though on drop by drop instillation (Murphy technic) the quantity may reach 1 liter. After each administration the patient should keep as quiet as possible for at least two hours, and suppress any desire to evacuate the bowel. Of course, patients who need nutrient enemas are kept in bed continuously, as rest in bed lessens the consumption of calories by at least 25 per cent. To favor retention, tincture of opium may be introduced, in small doses given in a microenema about thirty minutes previously.

A cleansing enema daily is advisable. This should precede the nutrient enema by about an hour. Introducing other enemas in the intervals between the nutrients is undesirable, as it lessens the chances of retention. It is best to give the nitrogenous and the carbohydrate enemas separately. In accordance with these considerations, von Noorden[62] proposes the following formulas: Enema 1 = albumose-peptone, 60 Gm.; sodium chloride, 2.5 Gm.; alcohol, 9 cc.; water, 300 cc. Enema 2 = dextrin, 100 Gm.; sodium chloride, 2.5 Gm.; alcohol, 9 cc.; water, 300 cc. For drop by drop enemas, the concentration of the dextrin had better be reduced to 15 per cent; that of the albumose-peptone, to 10 per cent. To calculate the caloric income on the basis of the composition of such enemas is fallacious, as a certain proportion of the nutriments is undoubtedly decomposed by bacteria, and thus becomes useless to the system. Hence rectal alimentation is slow starvation; but the starvation is slower than it would be without the nutrient enemas.

(To be continued)

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[60] Murphy, J. B.: Perforative Peritonitis, General, Free, Suppurative, Surg., Gynec. & Obst., June, 1908, pp. 565-598.

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SATURDAY, JUNE 12, 1926

THE NATURE OF GASTRO-INTESTINAL MOTILITY

Motility is one of the striking functions of the alimentary canal. The orderly propulsion of its contents is an essential response to the presence of food; when for some reason the muscular contractions of the gastro-intestinal tract become disorderly, manifestations ranging from mild distress to highly untoward effects may arise. In the genesis of both the normal and aberrant phenomena of alimentary movement, extrinsic and intrinsic nervous factors as well as the muscular tissues may be concerned. What are the respective rôles of each? On the answer to this question will depend, in no small degree, all measures of relief or promotion that are directed toward conditions of gastro-enteric motor functions.

The principal types of gastro-intestinal motility, as they have recently been summarized,[1] are peristalsis and hunger contractions in the stomach, peristalsis and rhythmic segmenting contractions in the small intestine, and peristalsis and antiperistalsis in the large intestine. Gastro-intestinal motility of all these types has been observed following section of the extrinsic nerves supplying the stomach and intestine. Consequently, it is generally assumed that this motility, though normally subject to central nervous control through the extrinsic nerves, originates in the neuromuscular mechanism in the walls of the stomach and intestine.

In attempting to ascertain whether motility of certain of these types is initiated in the enteric nervous system or in the enteric musculature, Thomas and Kuntz[1] of the St. Louis University School of Medicine have studied the consequences of administration of nicotine in doses sufficient to paralyze the most peripheral elements of the enteric nervous mechanism. They observed that the rhythmic gastric and intestinal movements persist even under these conditions; therefore the capacity to contract rhythmically seems to be an inherent property of the gastro-intestinal musculature. The St. Louis investigators have also noted that the tonus of the muscle and the amplitude of the contractions undergo frequent changes, under experimental conditions, while the enteric nervous mechanism remains functional. Such changes do not occur following complete paralysis of the enteric nervous system. The rate of the rhythmic contractions is not materially altered by conditions affecting the nervous mechanism, but is altered by conditions affecting the muscle. It is concluded that although the capacity to contract rhythmically is probably inherent in the gastro-intestinal musculature, motility of this type would be functionally inadequate in the absence of nervous control. The enteric nervous mechanism brings about variations in the tonus of the musculature and the amplitude and force of the contractions, and initiates and coordinates peristaltic and other reflex movements in response to local stimuli. Under normal conditions, these activities are subject to some degree of control by the central nervous system through the extrinsic nerves. Without the participation of nervous control, the motor activities of the alimentary canal show a mechanical regularity quite unlike the modulated and extremely variable activity that characterizes the normal viscus. Recurrent changes in the type of rhythmic activity, frequent modifications of tonus, and amplitude of contractions are the characteristics of a mechanism guided by a certain degree of nervous control that determines its unique functional responses.

SOME RECENT CONTRIBUTIONS OF CHEMISTRY TO MEDICINE

The basic sciences on which medicine is founded have assumed individual prominence at different times. Much medical research at present, if concerned with fundamentals and not with purely superficial aspects, requires the resources of chemistry. Within recent years, especially, this science has aided in many of the important advances in medicine. In his little book, "Chemistry and Recent Progress in Medicine," Dr. Julius Stieglitz of the University of Chicago discusses the modern additions to therapeutics in the field of preparative chemistry and the chemical explanations furnished for some of the bodily functions and processes.

Among the new drugs, ethylene has been exceedingly prominent. A substance long known to chemistry is suddenly shown to possess therapeutic value. New drugs for special phases of the treatment of syphilis are being proposed from time to time, usually chemical modifications of arsphenamine. Sulpharsphenamine and tryparsamide are examples of this group.

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[1] Thomas, J. E., and Kuntz, A.: A Study of Gastro-Intestinal Motility in Relation to the Enteric Nervous System, Am. J. Physiol. 76: 606 (May) 1926.

The antiseptic properties of the aniline dyes, first discovered by Churchman[1] in 1912, when he observed that after certain gram-positive bacteria had been mixed with gentian violet they failed to grow, has, in the succeeding years, been put to therapeutic use. First employed locally, as in the lavage of joint infections, gentian violet was given intravenously in 1923 for generalized infections.[2] Mercurochrome-220 soluble is now used intravenously in septicemias and other generalized infections, and locally to the point of replacing iodine.

Besides substances foreign to the body, preparative chemistry is concerned with the isolation and preparation of products present in the normal body and necessary for health, but absent in certain disease conditions. Insulin is an example. Pituitary extract, epinephrine and thyroxin have been known longer, and the active principles of the ovary and testis remain to be identified and isolated.

While the foods that contain vitamins and the effects of their absence can be determined by purely biologic means, the real nature and properties of these elusive substances will be discovered only by chemical analysis. An important start has been made in the case of vitamin A in the work of J. C. Drummond.[3] Using the unsaponifiable fraction of cod liver oil, about 1 per cent of the total, he has separated the 10 to 15 Gm. of vitamin-containing material from 10 Kg. of the oil. Of this, only 0.005 mg. is needed daily for the normal growth of a rat. He has found that this substance contains only carbon, hydrogen and oxygen, but its exact composition remains to be determined. The chemical study of vitamin B proceeds rapidly. Two years ago, Seidell[4] prepared from brewers' yeast a crystalline picrate which has the antineuritic properties of vitamin B and for which he determined the chemical formula. W. H. Eddy[5] also obtained a highly active product from yeast, which has the relatively simple formula $C_5H_{11}O_3N$. This substance enabled growth of young rats fed on a diet lacking in vitamin B. Vitamin C has proved rather more difficult to handle, as it is readily destroyed by oxidation with atmospheric oxygen. However, Zilva[6] has succeeded in obtaining it in far more concentrated form than that in which it exists in nature, so that 0.15 mg. is a sufficient daily dose for guinea-pigs and monkeys. The discovery of the existence of the antirachitic substance now called vitamin D in the sterols of certain fats such as cod liver oil, and in cholesterol and other substances after they have been exposed to ultraviolet rays, is an important contribution to the knowledge of that prevalent condition. These excellent results tend to dispel the rather common idea that vitamins are indefinite or hypothetic "principles," instead of true chemical entities which can be subjected to ordinary laboratory manipulations and thereby purified at least to some extent.

Equally elusive are the toxins and antitoxins, but progress is being made toward their isolation and the analysis of their nature. Their relation to the proteins is being gradually worked out, and the substances for therapeutic use are being more highly concentrated and purified, with consequent reduction of untoward reactions. Indeed, the entire subject of immunology is closely related and indebted to chemistry. As Dr. H. G. Wells[7] has said: "The immunological reactions are chemical reactions. . . . The reagents involved are substances endowed with active chemical properties, and they are the product of chemical activity of the tissues of the body."

A few of the achievements of preparative chemistry have been mentioned, and there remains the contribution of chemistry toward explaining the functions and mode of action of different elements in the body. The study of calcium and phosphorus, their normal concentration in the blood and variations from the normal, and the conditions under which calcium phosphate is precipitated, have thrown much light on the problem of rickets. From purely chemical considerations, Howland[8] has set forth the conditions under which calcium phosphate is precipitated to form bone: briefly, when the product of the calcium and the inorganic phosphorus exceeds the solubility product constant for the salt at the given hydrogen ion concentration. A low carbon dioxide tension, such as exists in cartilage and other inactive tissue, favors the precipitation. In the normal child, the product is from 50 to 60; when it falls below 30, rickets is always present; between 30 and 40, rickets is usually present. He has also shown that phosphorus is the deficient element in rickets, being 3.5 mg. or below instead of the normal 5.5 to 6 mg. per hundred cubic centimeters of serum, while the calcium may be normal. One can therefore follow the improvement from an antirachitic agent not only clinically but also by chemical examination of the blood.

Clearly related to clinical medicine is the chemistry of the complex relations between blood serum and cells, and the distribution and movements of electrolytes and water between the two. One practical outcome of this study is the use of carbon dioxide as a respiratory stimulant in carbon monoxide poisoning and occasionally following anesthesia. The conditions governing the movements of salt and water between the blood and tissues are fundamental in the problem of edema, and from them a universally satisfactory explanation of this much discussed condition may sometime be evolved. Lastly, in the explanation of oxidation and reduction by modern chemistry, we have an attempt at explaining the fundamental processes of life. These reactions occurring in the body can best be studied from the nature of oxidation outside and the principles which control and limit the reaction. The subject is too complex for discussion here, but one can readily appreciate its importance and the value of understanding the processes on which all life rests.

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[5] Eddy, W. H., cited by Stieglitz: Chemistry and Recent Progress in Medicine.

[6] Zilva, cited by Harden, A.: Recent Work on the Chemistry of the Vitamins, Practitioner **116:** 224 (March) 1926.

[7] Wells, H. G.: The Chemical Aspects of Immunity.

[8] Howland, John: The Etiology and Pathogenesis of Rickets, Medicine **2:** 349 (Nov.) 1923.

FEDERALIZED MEDICAL TREATMENT VERSUS THE PRIVATE PRACTITIONER

By the Veterans' Act of 1924, Congress authorized hospitalization of veterans at government expense, without regard to the nature or origin of the disability. This treatment of disease at government expense was made available to all veterans in certain classes, without reference to the ability of the individual to provide treatment at his own expense or his right to obtain it from the state or city in which he lived. THE JOURNAL[1] called attention a few months ago to efforts at extension of the scope of this federal aid. May 17, the House of Representatives passed a bill[2] extending such government attentions to cover outpatient treatment as well as hospitalization, and enlarging the term "veterans" to include women who served as army nurses under contracts between April 21, 1898, and Feb. 2, 1901, contract surgeons and contract dentists. This bill is now pending in the Senate.

The government cannot be niggardly in the reward it gives for military service, but treatment and hospitalization for disabilities not incurred in the line of duty cannot be regarded as a recompense for such service. As they have no logical relation to the military or quasimilitary status of the beneficiary and are not proportioned to the military service rendered, they can be regarded only as gratuities. How long before the same reasoning that has provided these nonmilitary bounties may be expected to provide similar arrangements for governmental civilian employees? And if later the families of beneficiaries already on the rolls are placed among the elect, the step will not have gone much farther.

State medicine in this obnoxious form is with us, and is tending to grow under the patronage of the federal government. Physicians and private hospitals even now must compete with the federal government for the practice of those whose disabilities have not originated in government service and who are abundantly able to pay for treatment. If the bill passed by the House of Representatives becomes a law, the private practitioner and the private hospital will have to compete with the government, not only in providing hospital treatment for veterans, but in providing both hospital and outpatient treatment for veterans, contract surgeons, contract dentists and contract nurses. How long such unfair competition will continue is uncertain. But unless the present movement is checked, the outcome is sure: a greater and greater encroachment on the rights of the individual patient and physician.

The House of Delegates has three times passed resolutions voicing its opposition to this type of state medicine. Resolutions, however, accomplish nothing unless backed up by action. That action must come from the rank and file of the physicians throughout the country, who must make known their views to their senators and representatives in Congress. Action must be prompt if the extension of free federal medical service is to be checked.

Current Comment

THE PHYSIOLOGY OF "SECOND WIND"

The effects of exercises of endurance are in some ways comparable to the influence exerted by certain types of disease on the body. When carried to excess, the exercises are accompanied, as McKenzie[1] has described the outcome, by acute constitutional exhaustion, shown in breathlessness, from which recovery is rapid; by fatigue of the whole muscular system, from which a rest of a day or two is necessary, and by the chronic or nerve fatigue known as "staleness" among trainers, from which recovery may be a matter of weeks or even months. If the exercise is sufficiently active, the amount of waste material suddenly thrown into the circulation is greater than can be eliminated by the lungs. The breathing becomes rapid and shallow, the pulse quick and fluttering, and the person feels a sense of constriction around the chest; his head swims and throbs, and his face takes on the anxious expression so eloquently telling of the thirst for air. It is a familiar experience, particularly in the running of a race, that after some time the runner may become less distressed than at an earlier period. He is now said to have his "second wind," and can usually continue running with comparative comfort. Varied explanations have been offered for this phenomenon of relief, apparently representing a better equilibrium between the production of waste and its elimination. Thus it is suggested that, as a result of the production of metabolites in the contracting muscles, their vessels may be more dilated, so that the flow of blood through them becomes easier. There is an improvement of the pulse rate and decrease in the respiratory distress. With the advent of "second wind," the urgency of breathlessness fades. The characteristic look of distress disappears from the face, the head becomes clear, and the muscles perform with renewed vigor and elasticity. A runner can then continue his exercise until he feels the symptoms of general fatigue. In observations made in the Department of Physiology of the University of Pennsylvania, Berner, Garrett, Jones and Noer[2] have noted that the subjective sensation of "second wind" unquestionably comes earlier, the warmer the room conditions and the heavier the work done. The subjective sensations are confirmed by records of the respiratory changes, which show similar effects. The increase in the volume of air breathed with exercise occurs more rapidly in a warm than in a cold room. Neither of these variations appears to be dependent on changes in deep body temperature in the trunk, since at this time the rectal temperature is scarcely altered. As it has been demonstrated that the temperature of the muscles in the limbs is considerably below that of the rectum, the most reasonable hypothesis seems to be that the rate at which the muscle develops its full power to remove lactic acid is determined by its temperature, and that the temperature of the muscle reaches its optimum earlier when the metabolism is high with heavy work, or when the surrounding air is warm. Heavy clothing often facilitates the onset of second wind in vigorous exercise; hence warm weather may not be unfavorable to it.

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[1] The Trend of Veterans' Relief Legislation: State Medicine editorial, J. A. M. A. 86: 278 (Jan. 23) 1926.

[2] H. R. 12175, A Bill to Amend the World War Veterans' Act, 1924.

[1] McKenzie, R. T.: Exercise in Education and Medicine, Philadelphia, W. B. Saunders Company, 1909.

TRAINED NURSES

A report published in the Chicago *News* indicates that the Illinois State Association of Nurses, first district, has just put into effect a new policy under which its members are refusing to accept twenty-four hour duty when called on as private nurses by patients in hospitals. The demand means that a person requiring continuous attendance must employ two nurses where formerly he paid only one. For at least five years there has been increasing uneasiness among the medical profession and the public over the changing attitude of the nurse toward her vocation and her labor. What was formerly distinctly an auxiliary in the care of the sick has become split into a dozen professions and specialties, with increasing attention to management and decreasing attention to individual service. There are now nurses engaged in public health work, social service, laboratory technic, mental investigation, dietetics, roentgenology, anesthesia, hospital management, teaching and many other positions. Too few nurses who enter the training school have their thoughts focused on the ideal of personal service to ailing humanity. Rather, it would seem, they are stimulated to the securing of one of the dignified positions that lie within the categories mentioned. Obviously, by this development, the care of the individual sick person has suffered. The possible lack of this care is responsible for the unrest that pervades medical and lay circles in the matter of nursing. At the last annual session of the American Medical Association, the House of Delegates particularly requested the Board of Trustees to look into the nursing situation and to appoint a special committee for the purpose. On previous occasions, other investigative bodies have rendered reports. Granted that there is need for such highly specialized nursing administration as has been mentioned, the needs of the individual sick are primary ones. Apparently, nurses are being trained in technical matters to a point at which dignity suffers when they are asked to undergo the tribulations of personal service. The modification of curriculums should tend to the development of more nurses who will consider the care of the sick their highest ideal.

REGISTRATION UNDER THE HARRISON NARCOTIC ACT

Registration under the Harrison Narcotic Act must be renewed on or before June 30 by physicians desiring to continue to administer, dispense or prescribe narcotics. In registering this year, physicians will receive for the first time the benefit of the reduction in the tax, from $3 to $1. Thus they will save approximately a quarter million dollars through the work of the American Medical Association in securing this reduction. Failure to register carries with it liability to fine and imprisonment, and subjects the tardy registrant to a 25 per cent increase in his tax. A physician desiring the right to distribute, dispense and administer narcotic drugs of all kinds must register in class 4, but a physician who desires the right to dispense the so-called exempt narcotic preparations must register also in class 5. Registration in class 5 is not required of physicians *who only prescribe exempt preparations and do not dispense them.* A physician registered in class 4 pays no additional tax for registration in class 5, but a physician registering only in class 5 pays a tax of $1. The so-called exempt narcotic preparations include such as contain not more than 2 grains of opium, or more than one-fourth grain of morphine, or more than one-eighth grain of heroin, or more than 1 grain of codein, or any salt or derivative of any of them in 1 fluidounce, or, if a solid or semisolid preparation, in 1 avoirdupois ounce; and liniments, ointments or other preparations that are prepared for external use only, except such as contain cocaine, or alpha or beta eucaine, or the salt of, or any synthetic substitute for, any of them. A preparation to be exempt, however, must contain *active medicinal drugs other than narcotics. Dilutions* of narcotic drugs made by mixing them with inert substances are not within the exempted class.

Rise of Mental Therapy.—The waves of popularity which have marked the progress of mental therapy are an instructive object lesson. Animal magnetism rose to an immense vogue and fell, hypnotism has risen and declined at least twice, Couéism and autosuggestion are at the apex of the wave today, and a closely allied surge may be seen in the astonishingly immense developments of Christian science, New Thought and other doctrines. It may be concluded that all these movements derive their temporary vitality from the undoubted fact that they do produce results, and therefore include somewhere within them principles of actual objective validity. We may call these principles faith and suggestion, but in this wide sense such terms are little more than a cloak for our ignorance. Whatever these principles may be, it is clear that they are of vital concern to medicine, and it is the duty of medicine to dissect them out from their trappings and allot them a defined place in our therapeutic armory.—Hart, Bernard: *Lancet* **1**:589 (March 20) 1926.

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[2] Berner, G. E.; Garrett, C. C.; Jones, D. C., and Noer, R. J.: The Effect of External Temperature on Second Wind, Am. J. Physiol. **76**: 586 (May) 1926.

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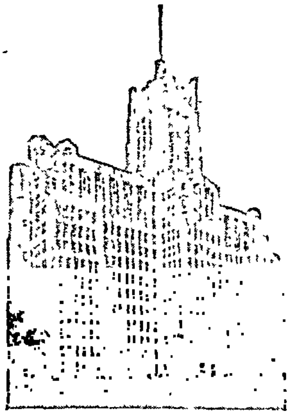
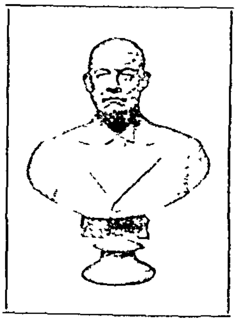


Bust of Dr. Talbot.—A marble bust of the late Dr. Eugene S. Talbot was presented to the American Medical Association, June 4, at a meeting in the assembly hall of relatives and friends, and officers of the association. Two friends of many years made the presentation speeches; Dr. George Van Ingen Brown, of Milwaukee, said there was no need of marble to perpetuate the memory of a life so helpful and so well known throughout the civilized world; Dr. Frank Billings spoke of the character and ideals of Dr. Talbot; of his long life of work in the Association and his part in establishing the Section on Stomatology. Dr. Edward B. Heckel, Pittsburgh, chairman of the Board of Trustees, in accepting the bust on behalf of the American Medical Association, said that we are glad to have this concrete evidence of the esteem in which Dr. Talbot was held, but that his ideals would endure longer than the marble itself. The original of the bust stands at the entrance of the stomatologic department [illegible] the University of Italy in Rome. It was made for the [illegible] government by the sculptor Ernesto Gazzero (The [illegible] Dec. 20, 1924).



IOWA

[illegible] d **Commits Suicide.**—James W. McLen- [illegible] red diploma mill "Oskaloosa College," [illegible] re found dead in the gas-filled base- [illegible] at Oskaloosa, May 8, following [illegible] a charge of using the mails to [illegible] the issuance of degrees and [illegible] to have established a correspondence school in Oskaloosa, using the name of the old, but now nonexistent, Oskaloosa College. After a course of study "in absentia," it was the practice of the school to issue certificates purporting to be diplomas to school teachers, ministers and others, conferring, it is reported, "doctor's degrees in everything from pedagogy to chiropody." Letters found in the home revealed that McLennan and his family died in a suicide pact because they lacked funds to fight what they described as an "unjust charge."

MAINE

State Medical Meeting.—The Maine Medical Association will meet at Poland Springs, June 10-12, under the presidency of Dr. Joseph D. Phillips, South West Harbor. Dr. John B. Deaver, Philadelphia, will speak Friday afternoon on "Surgical Versus Medical Treatment of Gallbladder Diseases." Dr. Wendell C. Phillips, New York, president, American Medical Association, will deliver the address at the banquet Friday evening, and on Saturday there will be a symposium on obstetrics, under the direction of Dr. Foster S. Kellogg, Boston, assisted by Drs. Leonard H. Ford, Bangor; Harold W. Garcelon, Auburn; Adam P. Leighton, Jr., Portland, and Ralph L. Reynolds, Waterville.

MARYLAND

Board of Mental Hygiene.—The annual meeting of the state board of mental hygiene and the boards of managers of the state hospitals for the insane and feebleminded with the governor and the director of welfare was held, May 25, at the Spring Grove State Hospital, Catonsville. Dr. Arthur P. Herring, commissioner of mental hygiene, reviewed briefly the work of the board since its organization in 1888, and the building program which the board is planning to submit to the general assembly in January, 1927. A report on the needs of each state hospital was made by the respective superintendents. The discussion was opened by Governor Ritchie.

MASSACHUSETTS

Summer Courses at Institute of Technology.—The Massachusetts Institute of Technology, Boston, recently announced that summer courses in public health and biology will be given from July 6 until August 17. The courses include (1) general bacteriology, (2) methods of teaching general biology, (3) public health laboratory methods, (4) health education methods, and (5) health records and statistical procedure.

Investigation of Workmen's Compensation Act.—The governor has signed a resolution for the appointment of a special commission to investigate the operation of the workmen's compensation law. There will be five citizens of the state on the commission, all unpaid, who will determine the effect of the present law, and what changes, if any, seem necessary. The commission is authorized to expend not more than $2,500 for assistants, and will report not later than December 1.

Summer Clinical Courses at Harvard.—In addition to the laboratory courses mentioned in THE JOURNAL, May 15, Harvard Medical School, Boston, offers to graduates clinical courses in such subjects as surgery, anesthesia, obstetrics and gynecology, dermatology, diseases of the nervous system, pediatrics, and various other specialties. Information concerning these courses may be obtained from Dr. Samuel R. Meaker, secretary of graduate courses at the medical school, 240 Longwood Avenue, Boston.

Physicians' Home Benefit Concert.—An operatic concert was given at the Boston Opera House, Boston, May 24, for the benefit of the Physicians' Home, Inc., and to aid in the purchase of the estate of the late Col. Edward N. Knox, known as Downsbury Manor, in Connecticut. The artists were Frances Alda, Dorothea Flexer, Giovanni Martinelli, Giovanni Martino and Albert Spalding. Allan Forbes, 120 Boylston Street, Boston, is treasurer for Massachusetts in the campaign to raise funds for the Physicians' Home.

Society News.—Dr. Philemon E. Truesdale addressed the North Bristol District Medical Society recently on "Peptic Ulcer," illustrated by lantern slides.——The next meeting of the New England Surgical Society will be in Boston about October 1.—Dr. Joseph J. Skirball, Boston, addressed the North Shore Medical Fraternity, Lynn, May 20, on "Some Common Eye Conditions as Seen by the General Practitioner," illustrated with lantern slides, and Dr. William D. McFee, Haverhill, April 20, on "Uses of Physiotherapy in General Practice."

MISSISSIPPI

Personal.—Dr. Solomon R. Boykin, Mize, has been appointed superintendent of the State Charity Hospital at Jackson.——The residence of Dr. William H. Aikman, health officer of Natchez and Adams County, was destroyed by fire, recently.

State Medical Election.—At the annual meeting of the Mississippi State Medical Association, Jackson, May 11-13, Dr. Theophilus E. Ross, Sr., Hattiesburg was elected president; and Drs. Roland W. Hall, Jackson, Ellis L. Wilkins, Clarksdale, and Charles E. Catchings, Jr., Woodville, vice presidents. Dr. Thomas M. Dye is the secretary; the next meeting will be held at Vicksburg. The contract with the *New Orleans Medical and Surgical Journal* was renewed for two years. Mrs. William H. Frizell, Brookhaven, was elected president-elect of the Women's Auxiliary.

MISSOURI

Personal.—Dr. H. L. Mantz, Kansas City, has been appointed superintendent of the Leeds Tuberculosis Sanatorium, which is a branch of the health department of Kansas City.——Dr. Charles H. Wallace, St. Joseph, has filed as a candidate for state representative from Buchanan County.——Dr. Cecil L. Wayman was appointed tuberculosis controller of St. Louis, April 1, to succeed Dr. Hyman I. Spector; Dr. Wayman was formerly with the U. S. Veterans' Bureau at St. Louis.——Dr. Richard L. Sutton, Kansas City, received the honorary degree of doctor of science from Washburn College, Topeka, Kan., June 2.

Hospital News.—The Christian Church Hospital, Kansas City, has been leased to the U. S. Veterans' Bureau; June 30, the Veterans' Bureau will vacate the Wesley Hospital, which was formerly operated by Dr. James A. Robertson, who announces that he will reopen the Wesley Hospital about August 1, and that Dr. Rush E. Castelaw, formerly superintendent, will return from Williamsport, Pa., and again assume the superintendency of Wesley Hospital.——Dr. Porter E. Williams has taken up the duties of superintendent of the Kansas City General Hospital; Dr. George C. Lee is the assistant superintendent.

Clinic for Crippled Children.—A clinic for crippled children was held at New Madrid, recently, under the auspices of the New Madrid County Health Unit. About twenty physicians volunteered their services; the railroads furnished free transportation and hospitals in St. Louis free beds during convalescence from operations to correct the deformities. Twenty crippled children will be sent to hospitals. Following the crippled children's clinic there was an eye clinic and a tonsil and adenoid clinic. This work is all free for those who are unable to pay, and such clinics have been held at least once a year since the county health unit was organized in 1922.

Society News.—Dr. Hugh H. Young, clinical professor of urology, Johns Hopkins University Medical School, addressed the Jackson County Medical Society, Kansas City, recently. ——Dr. B. Brouwer, professor of neurology, University of Amsterdam, Holland, addressed the St. Louis Medical Society, May 11, on "The Pathology of Sensibility."——Mrs. J. F. Shoemaker, wife of a member of the St. Louis Medical Society, has donated $5,000 toward the completion of the new auditorium. The society held its final meeting in the old building at 3525 Pine Street, June 1; Dr. Alonzo R. Kieffer spoke on the details of the construction of the auditorium. There was also a moving picture program.——Dr. Jabez N. Jackson, President-Elect of the American Medical Association, and Mrs. Jackson were guests of honor, May 8, at a reception given by the Jackson County Medical Society and the Women's Auxiliary at the residence of Dr. and Mrs. George Wilse Robinson, Kansas City.

School to Develop Speakers.—There will be a Kansas City Public Health Institute, under the auspices of the Health Conservation Association, beginning about the middle of June, the purpose of which will be to develop public speakers for public health and allied subjects. Those who complete this course satisfactorily will comprise the Speakers' Bureau of the Health Conservation Association and probably of the Jackson County Medical Society. There will be at least ten sessions covering various phases of hygiene and preventive medicine; the visiting speakers will include, among others, Drs. John M. Dodson and Herman N. Bundesen, both of Chicago; Dr. Charles P. Emerson, Indiana University School of Medicine, Indianapolis; Dr. Iago Galdston, New York, and Dr. Mazyck P. Ravenel, of the University of Missouri

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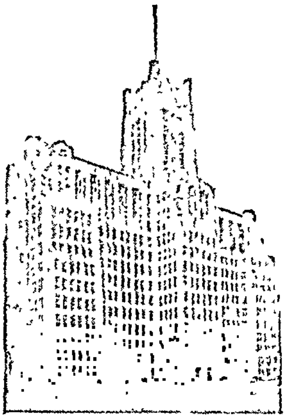
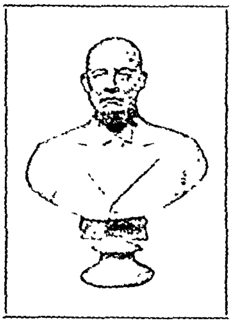
Northwestern's New Medical School.—The exterior of the Montgomery Ward Memorial Medical-Dental Center on the McKinlock Campus of Northwestern University having been completed, the cornerstone was laid with appropriate ceremonies, June 11. Dr. Charles H. Mayo of the class of 1888 gave an address on the campus in the afternoon, and Dr. Frank Billings of the class of 1881 at the banquet in the evening. There was a luncheon at the Furniture Mart, near the campus, to which the several faculties and alumni were invited. Among other documents placed in the cornerstone were a list of the faculty of the medical school from its founding in 1859 to date, a list of all graduates arranged by classes, and a list of the names of the present student body. The new building will be occupied, October 1, and dedicatory exercises will be held later when the auditorium is completed.



Bust of Dr. Talbot.—A marble bust of the late Dr. Eugene S. Talbot was presented to the American Medical Association, June 4, at a meeting in the assembly hall of relatives and friends, and officers of the association. Two friends of many years made the presentation speeches; Dr. George Van Ingen Brown, of Milwaukee, said there was no need of marble to perpetuate the memory of a life so helpful and so well known throughout the civilized world; Dr. Frank Billings spoke of the character and ideals of Dr. Talbot; of his long life of work in the Association and his part in establishing the Section on Stomatology. Dr. Edward B. Heckel, Pittsburgh, chairman of the Board of Trustees, in accepting the bust on behalf of the American Medical Association, said that we are glad to have this concrete evidence of the esteem in which Dr. Talbot was held, but that his ideals would endure longer than the marble itself. The original of the bust stands at the entrance of the stomatologic department of the University of Italy in Rome. It was made for the Italian government by the sculptor Ernesto Gazzero (The Journal, Dec. 20, 1924).



IOWA

Diploma Mill Head Commits Suicide.—James W. McLennan, head of the alleged diploma mill "Oskaloosa College," and his wife and son, were found dead in the gas-filled basement of their residence at Oskaloosa, May 8, following McLennan's indictment on a charge of using the mails to defraud in connection with the issuance of degrees and diplomas. McLennan is said to have established a correspondence school in Oskaloosa, using the name of the old, but now nonexistent, Oskaloosa College. After a course of study "in absentia," it was the practice of the school to issue certificates purporting to be diplomas to school teachers, ministers and others, conferring, it is reported, "doctor's degrees in everything from pedagogy to chiropody." Letters found in the home revealed that McLennan and his family died in a suicide pact because they lacked funds to fight what they described as an "unjust charge."

MAINE

State Medical Meeting.—The Maine Medical Association will meet at Poland Springs, June 10-12, under the presidency of Dr. Joseph D. Phillips, South West Harbor. Dr. John B. Deaver, Philadelphia, will speak Friday afternoon on "Surgical Versus Medical Treatment of Gallbladder Diseases." Dr. Wendell C. Phillips, New York, president, American Medical Association, will deliver the address at the banquet Friday evening, and on Saturday there will be a symposium on obstetrics, under the direction of Dr. Foster S. Kellogg, Boston, assisted by Drs. Leonard H. Ford, Bangor; Harold W. Garcelon, Auburn; Adam P. Leighton, Jr., Portland, and Ralph L. Reynolds, Waterville.

MARYLAND

Board of Mental Hygiene.—The annual meeting of the state board of mental hygiene and the boards of managers of the state hospitals for the insane and feebleminded with the governor and the director of welfare was held, May 25, at the Spring Grove State Hospital, Catonsville. Dr. Arthur P. Herring, commissioner of mental hygiêne, reviewed briefly the work of the board since its organization in 1888, and the building program which the board is planning to submit to the general assembly in January, 1927. A report on the needs of each state hospital was made by the respective superintendents. The discussion was opened by Governor Ritchie.

MASSACHUSETTS

Summer Courses at Institute of Technology.—The Massachusetts Institute of Technology, Boston, recently announced that summer courses in public health and biology will be given from July 6 until August 17. The courses include (1) general bacteriology, (2) methods of teaching general biology, (3) public health laboratory methods, (4) health education methods, and (5) health records and statistical procedure.

Investigation of Workmen's Compensation Act.—The governor has signed a resolution for the appointment of a special commission to investigate the operation of the workmen's compensation law. There will be five citizens of the state on the commission, all unpaid, who will determine the effect of the present law, and what changes, if any, seem necessary. The commission is authorized to expend not more than $2,500 for assistants, and will report not later than December 1.

Summer Clinical Courses at Harvard.—In addition to the laboratory courses mentioned in THE JOURNAL, May 15, Harvard Medical School, Boston, offers to graduates clinical courses in such subjects as surgery, anesthesia, obstetrics and gynecology, dermatology, diseases of the nervous system, pediatrics, and various other specialties. Information concerning these courses may be obtained from Dr. Samuel R. Meaker, secretary of graduate courses at the medical school, 240 Longwood Avenue, Boston.

Physicians' Home Benefit Concert.—An operatic concert was given at the Boston Opera House, Boston, May 24, for the benefit of the Physicians' Home, Inc., and to aid in the purchase of the estate of the late Col. Edward N. Knox, known as Downsbury Manor, in Connecticut. The artists were Frances Alda, Dorothea Flexer, Giovanni Martinelli, Giovanni Martino and Albert Spalding. Allan Forbes, 120 Boylston Street, Boston, is treasurer for Massachusetts in the campaign to raise funds for the Physicians' Home.

Society News.—Dr. Philemon E. Truesdale addressed the North Bristol District Medical Society recently on "Peptic Ulcer," illustrated by lantern slides.——The next meeting of the New England Surgical Society will be in Boston about October 1.—Dr. Joseph J. Skirball, Boston, addressed the North Shore Medical Fraternity, Lynn, May 20, on "Some Common Eye Conditions as Seen by the General Practitioner," illustrated with lantern slides, and Dr. William D. McFee, Haverhill, April 20, on "Uses of Physiotherapy in General Practice."

MISSISSIPPI

Personal.—Dr. Solomon R. Boykin, Mize, has been appointed superintendent of the State Charity Hospital at Jackson.——The residence of Dr. William H. Aikman, health officer of Natchez and Adams County, was destroyed by fire, recently.

State Medical Election.—At the annual meeting of the Mississippi State Medical Association, Jackson, May 11-13, Dr. Theophilus E. Ross, Sr., Hattiesburg was elected president; and Drs. Roland W. Hall, Jackson, Ellis L. Wilkins, Clarksdale, and Charles E. Catchings, Jr., Woodville, vice presidents. Dr. Thomas M. Dye is the secretary; the next meeting will be held at Vicksburg. The contract with the *New Orleans Medical and Surgical Journal* was renewed for two years. Mrs. William H. Frizell, Brookhaven, was elected president-elect of the Women's Auxiliary.

MISSOURI

Personal.—Dr. H. L. Mantz, Kansas City, has been appointed superintendent of the Leeds Tuberculosis Sanatorium, which is a branch of the health department of Kansas City.——Dr. Charles H. Wallace, St. Joseph, has filed as a candidate for state representative from Buchanan County.—— Dr. Cecil L. Wayman was appointed tuberculosis controller of St. Louis, April 1, to succeed Dr. Hyman I. Spector; Dr. Wayman was formerly with the U. S. Veterans' Bureau at St. Louis.——Dr. Richard L. Sutton, Kansas City, received the honorary degree of doctor of science from Washburn College, Topeka, Kan., June 2.

Hospital News.—The Christian Church Hospital, Kansas City, has been leased to the U. S. Veterans' Bureau; June 30, the Veterans' Bureau will vacate the Wesley Hospital, which was formerly operated by Dr. James A. Robertson, who announces that he will reopen the Wesley Hospital about August 1, and that Dr. Rush E. Castelaw, formerly superintendent, will return from Williamsport, Pa., and again assume the superintendency of Wesley Hospital.——Dr. Porter E. Williams has taken up the duties of superintendent of the Kansas City General Hospital; Dr. George C. Lee is the assistant superintendent.

Clinic for Crippled Children.—A clinic for crippled children was held at New Madrid, recently, under the auspices of the New Madrid County Health Unit. About twenty physicians volunteered their services; the railroads furnished free transportation and hospitals in St. Louis free beds during convalescence from operations to correct the deformities. Twenty crippled children will be sent to hospitals. Following the crippled children's clinic there was an eye clinic and a tonsil and adenoid clinic. This work is all free for those who are unable to pay, and such clinics have been held at least once a year since the county health unit was organized in 1922.

Society News.—Dr. Hugh H. Young, clinical professor of urology, Johns Hopkins University Medical School, addressed the Jackson County Medical Society, Kansas City, recently. ——Dr. B. Brouwer, professor of neurology, University of Amsterdam, Holland, addressed the St. Louis Medical Society, May 11, on "The Pathology of Sensibility."—— Mrs. J. F. Shoemaker, wife of a member of the St. Louis Medical Society, has donated $5,000 toward the completion of the new auditorium. The society held its final meeting in the old building at 3525 Pine Street, June 1; Dr. Alonzo R. Kieffer spoke on the details of the construction of the auditorium. There was also a moving picture program.—— Dr. Jabez N. Jackson, President-Elect of the American Medical Association, and Mrs. Jackson were guests of honor, May 8, at a reception given by the Jackson County Medical Society and the Women's Auxiliary at the residence of Dr. and Mrs. George Wilse Robinson, Kansas City.

School to Develop Speakers.—There will be a Kansas City Public Health Institute, under the auspices of the Health Conservation Association, beginning about the middle of June, the purpose of which will be to develop public speakers for public health and allied subjects. Those who complete this course satisfactorily will comprise the Speakers' Bureau of the Health Conservation Association and probably of the Jackson County Medical Society. There will be at least ten sessions covering various phases of hygiene and preventive medicine; the visiting speakers will include, among others, Drs. John M. Dodson and Herman N. Bundesen, both of Chicago; Dr. Charles P. Emerson, Indiana University School of Medicine, Indianapolis; Dr. Iago Galdston, New York, and Dr. Mazyck P. Ravenel, of the University of Missouri

School of Medicine. The number of matriculates for the institute is limited to fifty; certificates will be awarded those who pass an examination when the course is finished. Applications should be sent to Mrs. Ettella L. Kelly, executive secretary, 420 Hall Building, Kansas City.

NEW MEXICO

State Medical Election.—At the annual meeting of the New Mexico Medical Society, May 19-21, Dr. Charles F. Beeson, Roswell, was elected president; Dr. Cary B. Elliott, Raton, president elect; Dr. Dwight Allison, Las Cruces, vice president, and Dr. Charles M. Yater, Roswell, secretary-treasurer; the next annual meeting will be at Carlsbad.

NEW YORK

Report of Gun-Shot Wounds.—The governor has signed a bill requiring physicians to report to the police, immediately, cases of gun-shot wounds, and making the failure to make a report a misdemeanor.

Dr. Brown Resigns.—Dr. William P. Brown, medical director, Rocky Crest Sanatorium, and assistant director, Bureau of Tuberculosis, Cattaraugus County Board of Health, resigned, effective, June 1, and accepted the medical secretaryship of the Pennsylvania State Tuberculosis Society.

Hospital Resignations.—Fourteen physicians on the staff of the Oswego Hospital were reported to have resigned, May 15, in protest at the refusal of the trustees to reinstate two members of the staff who had been suspended for criticizing the hospital management, it is reported, in public addresses.

Veteran Physicians Honored.—The Ulster County Medical Society, Kingston, gave a testimonial dinner, June 3, to the physicians in the county who have practiced medicine at least fifty years. The guests of honor were Drs. James R. Nelson, Abraham P. Chalker, Henry Van Hoevenberg, Elbert H. Loughran and George C. Basten, all of Kingston, and Dr. Benjamin F. Neal, Ellenville, and Dr. Rufus Crawford, Saugerties. These veterans, all near 80 years of age, recalled before the society the pleasures and difficulties of medical practice fifty years ago, and the advances made in medical practice in that time. Dr. Loughran was toastmaster. The president of the society is Dr. Mary Gage Day.

Opposition to Treatment by a Corporation.—The Medical Society of the County of New York unanimously adopted the following resolution, May 24:

Whereas, It has come to the attention of this society that the New York Tuberculosis Association, Inc., as an inducement to obtain additional members therein, has made the following representations to the public, to wit:

"The New York Tuberculosis and Health Association, Inc., offers free information and advice on all health problems and expert chest examination with x-ray facilities at cost to employees of offices, stores and factories—Arrangements made for placement in suitable institutions when necessary"; and

Whereas, It is understood that Mr. Harry O. Hopkins, director of the association, has stated that the price of the expert chest examination with x-ray facilities is to be $15; and

Whereas, A corporation is expressly forbidden to practice medicine by the laws of the state of New York; and

Whereas, Said representation made to the public leaves the cost of such proposed treatment vague and uncertain, although known to the association; and

Whereas, Such treatment, stated to be at cost, is to be given to a group of employees, irrespective of their ability to pay therefor, many of whom can readily afford to obtain such advice and treatment from their family physicians; and

Whereas, No provision is contained in such proposal to limit such treatment and advice to those persons referred to the association by practicing physicians; and

Whereas, In the opinion of this society, such proposal, if carried out as made, would not be to the best interests of the profession or of the public; now, therefore, be it

Resolved, That the Medical Society of the County of New York is opposed to and protests against the carrying out of such proposal as made by the New York Tuberculosis and Health Association, Inc.

New York City

University News.—The Long Island College Hospital granted the degree of doctor of medicine to ninety graduates at the commencement exercises at the Academy of Music, June 3; this is said to be the largest class graduated since the school was founded, sixty-seven years ago.

Dentist Fined for Practicing Medicine.—Bertram Ball, D.D.S., was fined $500, June 4, according to the New York *Times,* for practicing medicine illegally. Dr. Ball's attorney announced that the case would be taken to the U. S. Supreme Court, if necessary, to test the constitutionality of the state law. Dr. Ball is said to have prescribed medicine for the kidneys of a patient he treated for pyorrhea.

Dinner to Sir Arthur Newsholme.—The board of council of the Milbank Memorial Fund tendered a dinner at the Hotel Biltmore in honor of Sir Arthur Newsholme of London, previous to his sailing for home, recently; among the guests present were Dr. William H. Welch, Baltimore; Dr. Hugh S. Cumming, Washington, D. C.; Dr. Livingston Farrand; Dr. Matthias Nicholl, Jr.; Dr. Louis I. Harris; Dr. Linsly R. Williams; Cornelius N. Bliss, Jr., A.B.; Edward M. Sheldon and Albert G. Milbank.

Free Cancer Clinics.—Commissioner of Welfare Bird S. Coler announced, May 12, that the city's free service for the treatment of cancer under the New York Cancer Institute will be extended to the East Harlem Health Center, 345 East One Hundred and Sixteenth Street, the New York Dispensary, 34 Spring Street, and the Bowling Green Neighborhood Association, 105 Washington Street, and that at each place medical and nursing attendance will be provided. Mr. Coler is reported to have said that New York is the only city in the world giving radium, roentgen-ray and electrotherapeutic treatments free of cost.

Personal.—Dr. George J. Doyle has been appointed chief medical examiner for the Municipal Civil Service Commission to succeed the late Dr. Joseph A. Kene.——Attorney William B. Groat, Hollis, has been appointed, by the attorney general of the state, deputy state attorney general in charge of the prosecution of illegal practitioners under the new medical practice act recently signed by the governor.—Dr. Nathan E. Broder has been appointed associate obstetrician to the People's Hospital.——The Surgeon General, U. S. Army, has recommended to the war department that Dr. Haven Emerson, colonel medical reserve corps, among others, be assigned to active duty for fifteen days from June 16, and directed to proceed to Carlisle Barracks, Pa., for training; Dr. William J. Francis, major, M. O. R C., was ordered to active duty for forty-five days' training at Mitchel Field, L. I., effective, May 1.——Dr. Antonio Fanoni has been decorated by the king of Italy knight commander of the Order of the Crown of Italy for his work for the Italian Hospital in New York and for benefactions to his native town, Settefrati, Italy.

NORTH DAKOTA

State Medical Election.—At the thirty-ninth annual meeting of the North Dakota State Medical Association, Minot, May 25-26, Dr. N. Oliver Ramstad, Bismarck, was elected president; Dr. Thomas Mulligan, Grand Forks, president-elect; Drs. William F. Sihler, Devils Lake, and John Crawford, New Rockford, vice presidents; Dr. Alexander J. McCannel, Minot, secretary, and Dr. William W. Wood, Jamestown, treasurer. The names of Drs. Henry H. Healy, Grand Forks, Henry M. Waldren, Drayton, and Murdock MacGregor, Fargo, were recommended to the governor for reappointment on the state board of medical examiners. The next meeting of the state medical association will be in Grand Forks in May, 1927.

OHIO

Hospital News.—The Flower Hospital, Toledo, will occupy its new ninety bed addition within the next few days; this will make the capacity of the hospital 150 beds.——The Longview Hospital and Hamilton County Infirmary, Cincinnati, which were recently purchased by the state, will be merged and known as the Longview State Hospital.——Dr. Wilbur M. Warner has been elected president of the staff of Middletown Hospital, Middletown, to succeed Dr. John C. Stratton.

Medals for Golf Champions.—At the sixth annual tournament of the Ohio State Medical Golfers' Association, Toledo, May 10, gold medals were presented to winners of championships for the last six years; the champion heretofore was awarded the Championship Cup, temporarily. Medals were thus presented to Dr. William D. Inglis, Columbus, winner in 1921; Dr. Earl E. Gaver, winner in 1922 and 1923; Dr. William H. Fisher, Toledo, 1924; Dr. Ralph R. Wilkinson, Cincinnati, 1925, and Dr. Thomas F. Heatley, Toledo, 1926. At the golfers' banquet following the tournament, Dr. E. Otis Smith, Cincinnati, was elected president of the association for 1927.

The Automobile a Major Health Problem.—In his annual report, the commissioner of health of Cleveland credits automobile traffic in that city as the cause of 226 deaths and 4,520 nonfatal injuries in 1925. The increase in automobile traffic, he says, is one of the most important causes of the increase in the number of cripples in the community; it was of far more importance than infantile paralysis, which caused twenty deaths in eighty-eight cases, and of far more importance, also, as a health problem than diphtheria, which caused 138 deaths in 1,746 cases. In a list of fourteen communicable diseases with the number of deaths that occurred from each, only one disease caused more deaths in Cleveland last year than did the automobile, and that was pneumonia.

OKLAHOMA

Increase of Rabies.—The state department of health, in a recent bulletin, notes that the state laboratory examined the heads of 264 dogs from January 1 to May 21, and that seventy-one were positive for rabies; also that 256 Pasteur treatments had been sent out by the laboratory since January 1. There were fourteen deaths from rabies in Oklahoma in 1925. It is necessary now, that indigent persons may receive Pasteur treatment free and without delay, for the commissioners of each county to designate some physician, druggist or health officer as agent who shall be authorized to purchase the treatment from the state laboratory, to be reimbursed by the county; formerly treatment was furnished free to all indigent persons.

PENNSYLVANIA

Personal.—Dr. John W. Shirer won the prize offered by the Allegheny County Medical Society for the best case report submitted by an intern in any hospital in Allegheny County (The Journal, February 20).——Dr. Amos M. Pierce, West Elizabeth, was recently given an ovation by the Valley Medical Society on the completion of his fiftieth year in the practice of medicine.——Dr. John E. Barsby, Chester, has been engaged by the Delaware County Tuberculosis Association to take charge of the regional clinic service and industrial health service.

Fifth Councilor District Meeting.—A scientific and social meeting of physicians of the Fifth Councilor District of the Medical Society of the State of Pennsylvania will be held June 16, 10:30 a. m., at the Huntingdon Country Club, Huntingdon, to which all reputable physicians are invited. There will be a dinner following the scientific program ($2 per plate). Dr. Harold A. Miller, professor of obstetrics, University of Pittsburgh School of Medicine, and Dr. W. Wayne Babcock, professor of surgery and clinical surgery, Temple University School of Medicine, Philadelphia, will speak on scientific subjects, and among the other guests will be the president, president-elect, and secretary of the state medical society.

Hospital News.—The last sale of Christmas seals in Pennsylvania totaled a little over $500,000; every Pennsylvania tuberculosis organization retains at least 80 per cent of Christmas seal funds, the rest going to the state and national tuberculosis work.——The court of Northampton County handed down the decision, April 5, that the County Tuberculosis Hospital Act of 1925 was constitutional and that the election of Nov. 6, 1923, providing for a bond issue of $200,000 for a tuberculosis hospital in that county, was valid.——McKean County has planned to hold an election in the fall for establishing a tuberculosis sanatorium under the Tuberculosis Hospital Act of 1925.——More than 600 residents of Roxborough and Manayunk attended a dinner, June 2, to open a campaign to raise $250,000 to enlarge the Memorial Hospital, Roxborough (Philadelphia).

Camp of Instruction.—The state department of health will hold its seventh annual camp of instruction, June 21-23, at the Mont Alto Sanatorium. The meeting will be limited largely to the staff of the department and physicians connected with the state tuberculosis clinics, and to a number of representatives from cooperating agencies. The camp will specialize on tuberculosis, emphasing heliotherapy, the advantages of rest, pneumothorax, special nutrition classes and treatment in the home of patients. The speakers will include Drs. Henry R. M. Landis and Eugene Opie of the Henry Phipps Institute; Dr. Stephen A. Douglass of the Milbank Demonstration in Cattaraugus County, N. Y.; Dr. Nathan Barlow, U. S. Veterans' Bureau; Dr. Ward Brinton, director of the tuberculosis division of the Philadelphia Department of Health, and others.

Philadelphia

Society News.—Drs. Reginald Fitz and Frederick M. Allen, Morristown, N. J., addressed the Philadelphia County Medical Society, June 9, on "The Management of the Patient with Chronic Nephritis" and "Renal Vascular Disease: Some Clinical and Experimental Observations," respectively.

Hospital Anniversary.—Dr. Thomas W. Salmon, professor of psychiatry, Columbia University College of Physicians and Surgeons, New York, delivered the address at the one hundred and seventy-fifth anniversary of the Pennsylvania Hospital, May 26; the hospital was incorporated, May 11, 1751, and the first patients admitted, Feb. 10, 1752, one of whom was a mental patient (The Journal, April 10, 1926, p. 1140).

Diphtheria Prevention in Schools.—The board of education, which has started a campaign to immunize pupils in the city schools against diphtheria, expects to complete the work in the West Philadelphia schools and in the schools east of Broad Street and south of Market Street before the present term ends; the campaign will start in the remaining schools at the beginning of the fall term. Dr. Wilmer Krusen, city health commissioner, will supervise the work. Each pupil will be given a coupon to be signed by his parents and presented to the physicians of the board of education at the school before the toxin-antitoxin is administered.

Jefferson Medical College Commencement.—The one hundred and first annual commencement of Jefferson Medical College was held, June 4, in the Academy of Music; the degree of doctor of medicine was conferred on 144 graduates. The honorary degree of doctor of literature was conferred on Dr. Harvey Cushing, professor of surgery, Harvard University, Boston, the principal speaker. Commissions as first lieutenant in the Medical Officers' Reserve Corps, U. S. Army, were presented to forty-nine members of the graduation class. This was the fourth group of Jefferson students to receive commissions in the reserve corps after having completed a course in military training.

UTAH

State Medical Election.—At the annual meeting of the Utah State Medical Association, Salt Lake City, May 8, Dr. William R. Calderwood, Salt Lake City, was elected president; Dr. Eugene H. Smith, Ogden, president-elect; Drs. Edward M. Conroy, Ogden, Frank F. Fiske, Price, and Richard A. Pearse, Brigham City, vice presidents; Dr. Frank B. Steele, Salt Lake City, secretary, and Dr. Edward D. Le Compte, Salt Lake City, treasurer.

CANADA

Trudeau-Laennec Meeting.—The Trudeau Society of Michigan and the Laennec Society of Ontario, Canada, held a joint meeting, May 25, at the Queen Alexander Sanatorium, London, Ontario. Dr. Jabez H. Elliott, Toronto, discussed "Recent Books on Tuberculosis and Pulmonary Disease"; Dr. Bruce C. M. Whyte, Battle Creek, Mich., "Bronchiectasis with Reference to Lipiodol Injections," and Dr. Plinn F. Morse, Detroit, "Clinical and Pathologic Findings in Chronic Pneumonitis."

Society News.—The North Pacific Pediatric Society will hold its summer meeting at the Empress Hotel, Vancouver, B. C., June 22; Dr. Willis S. Lemon, Rochester, Minn., will speak on "Bronchiectasis in Childhood"; Dr. J. G. Fitzgerald, University of Toronto Faculty of Medicine, "Diphtheria Toxoid (Anatoxin) as an Immunizing Agent Against Diphtheria"; Dr. Robert H. L. O'Callaghan, Calgary, Alta., "Pneumococcus Peritonitis," and Drs. Harry A. Rawlings and Alfred Howard Spohn, Vancouver, on "Diagnosis and Treatment of Enlarged Thymus."——Dr. Walter Ross Lane, Nanaimo, has been elected president of the No. 6 District Medical Society, and Dr. Thomas L. Butters, Courtenay, vice president; Dr. William D. Keith, Vancouver, addressed the annual meeting of the society recently on "Clinical Problems of Treatment of Goiter."

Canadian Medical Association Meeting.—The fifty-seventh annual meeting of this association will be at Victoria, B. C., June 21-25, with headquarters at the Empress Hotel. The council will meet throughout Monday and Tuesday, and the official opening of the meeting will be Wednesday, when there will be among other scientific discussions a symposium on "Duodenal Ulcer" by Dr. Herbert C. Moffitt, San Francisco, and Drs. William H. Dickson and Frederick N. G. Starr, Toronto, and an address by Dr. Leonard G. Rowntree, Rochester, Minn., on "Progress in Our Knowledge of Kidney and Liver Function in Relation to Disease." Dr. Maude E. S. Abbott, Montreal, will give a lantern slide exhibit, Thursday, on "The Sir William Osler Memorial Volume and Its Classified and Annotated Bibliographies," and, among others, Dr. John F. Barnhill, Indianapolis, will discuss "Some General Diseases Which Have Origin in Infections of the Head." Dr. Frederick G. Banting, Toronto, will discuss "Medical Research," Friday, when there will also be a symposium on goiter by Drs. William D. Keith, Vancouver, Alvah H. Gordon, Montreal, Gordon S. Fahrni, Winnipeg, and W.

Herbert McGuffin, Calgary. There will be extensive entertainment: receptions, luncheons, drives, golf, visits and garden parties, some arranged especially for the women, to assist whom a committee of women will be in attendance daily at headquarters.

GENERAL

New Hospital Headquarters.—The American Hospital Association will move into its new headquarters, 18-22 East Division Street, Chicago, July 1.

Fellowships in Medicine.—In order to receive consideration at the September meeting of the Medical Research Board of the National Research Council, applications for fellowships in medicine should be filed not later than August 1, with the Chairman, Medical Fellowship Board, National Research Council, Washington, D. C.

Accidents at Coal Mines in April.—The bureau of mines reports that 130 men were killed in accidents at coal mines in the United States in April, 101 of whom were killed in bituminous mines and twenty-nine in anthracite mines. The death rate per million tons of coal mined was 2.69, as compared with 3.90 for April, 1925. In the first four months of 1926 there were 814 men killed in the coal mining industry in the United States. There were no major disasters in April, but there were seven in the preceding months of this year, all of which were caused by explosions.

Increase in Rural Health Service.—There were, at the beginning of this year, 307 counties or districts in the United States with local health service under whole-time local health officers; of these 280, or 91 per cent, according to the U. S. Public Health Service, were receiving financial assistance from one or more of the following agencies: the state board of health, the U. S. Public Health Service, the International Health Board, and the Children's Bureau of the U. S. Department of Labor. This number represents a net gain of twenty-seven counties in the year 1925 over the number that had local health service in 1924.

American Academy of Ophthalmology and Oto-Laryngology.—The thirty-first annual meeting of the academy will be at Colorado Springs, Colo., September 13-18, with headquarters at the Antlers Hotel. Mr. Basil Graves, London, England, the guest of honor, will give an address on some phase of slit lamp work. The American Board of Ophthalmic Examinations and the American Board in Oto-Laryngology will probably hold their examinations in Denver, September 13; the Section on Instruction will begin its sessions, September 17, and continue until the 18th. There will be a one-day golf tournament, September 13, for which arrangements can be made by addressing Dr. Frank L. Dennis, 301 Ferguson Building, Colorado Springs.

Decrease in Birth Rates.—Birth rates in 1925 were lower than in 1924 in twenty-six of the thirty states for which figures have been compiled by the bureau of the census, the department of commerce has announced. North Carolina, with a birth rate of 22.8 per thousand of population, shows the highest 1925 birth rate, and Montana, with 15.1 per thousand, shows the lowest. Death rates for 1925 were higher than for 1924 in sixteen of the thirty states shown for both years. The highest 1925 death rate, 14.6 per thousand, is shown for Vermont, and the lowest, 7.7, for Montana and North Dakota. Infant mortality rates for 1925 were generally higher than those for 1924, as nineteen of the thirty states show higher rates in 1925. The highest 1925 infant mortality rate, 90.4, appears for Maryland, and the lowest, 51.2, for Oregon.

International Meeting of Balneologists.—The eighth International Medical Postgraduate Course with special reference to balneology and balneotherapy will be held at Carlsbad, September 12-18. Clinicians and scientists from the medical faculties of Austria, Bulgaria, Czechoslovakia, Denmark, England, Germany, Italy, Norway, Sweden, Switzerland and Turkey will give addresses. The United States will be represented by Dr. Lewellys F. Barker, emeritus professor of medicine, Johns Hopkins University Medical Department, Baltimore. An invitation is extended to all physicians; those who accept will receive a passport visé without charge and a 33 per cent reduction on all state railways in Czechoslovakia. A program of entertainment has been arranged. Programs will be sent on application to Dr. Edgar Ganz, secretary of the Medical Postgraduate course in Carlsbad, Czechoslovakia.

Foot-and-Mouth Disease Eradicated from the United States.—The Department of Agriculture revoked, June 10, all domestic quarantine regulations previously imposed because of foot-and-mouth disease in live stock. Just a year has elapsed since the disease was last found in California; in the meantime there has been no recurrence of the infection there. Texas, where foot-and-mouth disease reappeared in 1925, was officially freed from all quarantine, April 1, 1926. Bureau of Animal Industry order 297, effective, June 10, officially declares that foot-and-mouth disease has been eradicated from the United States. There still remain in effect, however, the usual restrictions, which are rigidly enforced, that protect the United States from foot-and-mouth disease and other live stock plagues in foreign countries. As the result of discovering the disease in hog carcasses from the Netherlands intended for consumption in Great Britain, the British ministry of agriculture and fisheries has prohibited the landing in Great Britain of all carcasses from continental Europe. This is the first time the British government has prohibited the importation of fresh meat on account of foot-and-mouth disease, although for years it has enforced quarantine against live animals from countries in which the disease was present.

Society News.—Dr. Harvey Cushing, Harvard University Medical School, Boston, was elected president of the American Surgical Association, at the annual meeting, Detroit, May 26; Drs. Alexander Primrose, Toronto, and Arthur A. Law, Minneapolis, vice presidents; Dr. Robert B. Greenough, Boston, secretary, and Dr. Eugene H. Pool, New York, treasurer. The next annual meeting will be at Richmond, Va.——Lee K. Frankel, Ph.D., New York, was elected chairman of the National Health Council at the American Health Congress, Atlantic City, May 22; Dr. William F. Snow, New York, vice chairman; Dr. Linsly R. Williams, New York, treasurer; Dr. Ellice M. Alger, New York, recording secretary, and Dr. Thomas C. Edwards, New York, acting executive officer.——The Mid-Western Association of Anesthetists will hold its annual meeting, October 11-14, at Kansas City, Mo.; physicians or dentists desiring to present a paper at this meeting should communicate with the secretary, Dr. Ralph M. Waters, 425 Argyle Building, Kansas City, Mo.——The Mississippi Valley Sanatorium Association will hold its annual meeting in conjunction with the Mississippi Valley Conference on Tuberculosis at Chicago, June 15, at the John B. Murphy Memorial Building, 40 East Erie Street; at 12:30 there will be a luncheon at the Hotel Sherman given by the president, Anton J. Cermak, of the board of county commissioners——Dr. George M. MacKee was elected president of the American Dermatological Association at the meeting in Philadelphia, May 27-29; Dr. Otto H. Foerster, Milwaukee, vice president, and Dr. Clarence Guy Lane, 416 Marlboro Street, Boston 17, Mass., secretary-treasurer.

FOREIGN

Typhus at Medical College.—Six members of the staff of the Peking Union Medical College, Peking, China, had typhus fever or were convalescing, according to a newspaper report, May 29, contracted while caring for the Mukden troops outside the walls of the city. The epidemic of typhus in Peking, which resulted in 1,000 cases among civilians this year, has passed its peak.

Prizes for Research on Venereal Disease.—The French Ligue contre le péril vénérien offers a prize of 5,000 francs for the best work presented on heredosyphilitic psychopathies in children and adolescents, and their share in juvenile delinquencies. A similar prize will be given for the best work on the association of syphilis and tuberculosis in bone and joint disease. A further prize of 20,000 francs will be awarded to the one making the most important discovery in the field of venerology during 1926 and 1927. The headquarters of the league are at rue de Lisbonne 44, Paris. The competing works must be received before Oct. 1, 1928.

Cultist Sentenced for Involuntary Homicide.—The *Deutsche medizinische Wochenschrift* gives the details of the case already mentioned in The Journal in which the Lübeck courts condemned a Christian science practitioner to six months' imprisonment for manslaughter from neglect of due caution (*fahrlässige Tötung*). She had acceded to the request of the parents and proceeded to treat with prayer alone a boy, aged 14, who had fallen on a picket, which entered the abdomen. The supreme court in a decree, dated Oct. 5, 1925, confirmed the sentence, specifying that the cultist should have refused to take charge of the case and should have advised the family to call in a physician.

International Commission on Rheumatism.——The *Nederlandsch Tijdschrift voor Geneeskunde* relates that twelve countries sent representatives to the convention organized to discuss better methods for prevention and treatment of rheumatism, which was held recently at Prague. It was decided to found a central bureau, with headquarters in the Netherlands; Dr. J. van Breemen, Amsterdam, will probably be in charge. The important social-economic aspect of rheumatism is being studied with special interest now in England, Czechoslovakia, Austria and elsewhere, national committees having been organized for the purpose in ten countries.

Public Health in Jugoslavia.—From a letter in the *Deutsche medizinische Wochenschrift* we note that Jugoslavia in the last five years has founded 23 institutes for hygiene, 9 for epidemiology, 19 for bacteriology, 3 malaria stations with 42 branches, 50 venereal disease policlinics, 34 tuberculosis stations, 18 for trachoma, and other institutions, to a total of 250. In four years 22,480 persons were given preventive treatment for rabies. The Rockefeller Foundation donated twenty millions to the work, and the Health Commission of the League of Nations aided in the fight against malaria, which presents special problems owing to the peculiar conditions of the water supply. In 1924, 220,561 persons were examined for malaria, and 2,100 Kg. of quinine was distributed, colored to prevent resale. The progress of hygiene is handicapped by the lack of manuals in the language of the country, and reliance has to be mainly on moving pictures in education of the public.

Personal.—Dr. C. Richet, professor emeritus of physiology at the University of Paris, a pioneer in biology with anaphylaxis and serotherapy, was presented, May 22, with a bronze portrait bust and tributes from delegates of scientific societies throughout Europe. Belgium sent the insignia of the grand commander of the Order of Leopold, and General Foch presented him with the cross of the grand commander of the Legion of Honor.——Prof. R. Bastianelli was in charge of the reception tendered the Interstate Postgraduate Clinical Assembly of North American Physicians at the capitol at Rome.——Dr. Monod, Vichy, and Dr. Fox, London, presided at the International Congress on Medical Hydrology, held recently at Carlsbad.——Honorary citizenship was conferred on Prof. S. Freud by the city of Vienna on his seventieth birthday, May 6.——Dr. L. Bernard and ten other members of the Académie de médecine at Paris have been appointed a committee to organize a laboratory for the purpose of supervising the drugs obtainable by the public dispensaries and practitioners for the treatment of syphilis.——Prof. E. Kraepelin, Munich, has been awarded a fund for a five months' study in India of paralysis.——The triennial Manson medal has been conferred by the London Tropical Medicine Society on Prof. E. Marchiafava, Rome, for his works on malariology.——The seventieth birthday of Dr. Adolpho Lutz was celebrated recently in Brazil, as the pioneer of experimental medicine, parasitology and biology. He is still actively at work in the Instituto Oswaldo Cruz, where he has made many discoveries.——The Hungarian Academy of Science has given the academy prize this year to Dr. E. Krompecher, professor of pathology, University of Budapest, for his work on cancer.——The Académie des sciences morales at Paris has conferred the Audiffred prize on Dr. M. Ménard, radiologist of the Cochin hospital, crippled by injuries from the roentgen rays.

Deaths in Other Countries

Dr. **M. Pellissier**, Lille, professor of pathology, author of various medicolegal tests, aged 40.——Dr. **A. Barlocco**, Modena, professor of clinical medicine.——Dr. **C. Sforza**, Florence, formerly general medical inspector of the Italian army medical department, director of the *Giornale di Medicina Militare*, aged 78.——Dr. **E. Landolt**, Paris, whose works in all fields of ophthalmology are internationally known, one of the three founders of the *Archives d'ophtalmologie* in 1881, aged 79.——**Sir William Boog Leishman**, director-general, British Army Medical Service; honorary physician to the king; formerly president, Society of Tropical Medicine and Hygiene; for ten years member of the Medical Research Council; chairman, Foot and Mouth Disease Research Committee; late examiner in pathology at Oxford University and in tropical medicine at the University of Cambridge, June 2, following a short illness.——**William Frederick Shanks**, professor of physiology, University of Leeds, England, April 15, aged 38.——Prof. **F. v. Soxhlet**, emeritus professor of agricultural chemistry at Munich, inventor of an apparatus for sterilizing milk which bears his name, aged 79.——Major Le Goff, of the French medical corps, killed in an airplane accident while taking wounded to the hospital in Morocco.

Foreign Letters

LONDON

(From Our Regular Correspondent)

May 29, 1926.

The Congress of Institute of Public Health

This year's congress of the Royal Institute of Public Health is to be held at Bristol, from May 19 to 24, inclusive. Tuberculosis and cancer problems are among the topics that will engage the attention of the Section of State Medicine and Municipal Hygiene. The Duchess of Hamilton is to open a discussion on "Humane Slaughtering." A contribution of general interest should be that on "How to Get a Smokeless Atmosphere—and Make It Pay," by Councilor W. Brownhill Smith, chairman of the Glasgow Health Committee. The discussion in the Section of Naval, Military, Air and Tropical Diseases of Health Questions, having special reference to the services, is to be supplemented by several papers of great general importance; for instance, that on "The Relative Connection Between Chemical Warfare, Physics, Chemistry, Meteorology and Public Health," by Major H. S. Blackmore. Many phases of health in reference to the factory and workshop are to be debated before the Section of Industrial Hygiene. "Vocational Selection" is the subject of three of the contributions. The president of the Section of Pathology, Bacteriology and Biochemistry is Dr. J. C. Adami. He will open a discussion on cancer in a session jointly with the Section of State Medicine and Municipal Hygiene. The Section of Women and the Public Health is to be presided over by the Duchess of Beaufort. Papers and debates on various subjects related to the welfare of children and of women engaged in industry will figure in this department. "The Psychology of Women Workers" is to be dealt with by Miss May Smith and Miss Sheila Barington.

The Nervous System of Plants

Sir Jagadish Chandra Bose, F.R.S., the Indian biologist, lecturing at University College, controverted the views of Pfeffer and others that a hydromechanical disturbance or the secretion of an irritant by a wound is necessary for excitation in plants. He said that an excitatory impulse was generated in the plant by a feeble stimulus which caused no wound or any physical disturbance. He found that *Mimosa pudica* could be excited by an electric shock one tenth of the intensity that evoked human sensation. By such a feeble stimulus, which caused no wound and no mechanical disturbance, the plant could be uniformly excited time after time, and the velocity of its nervous impulse determined under normal or changed external conditions. The impulse was transmitted not only upward but also downward against the direction of the movement of sap. Cold applied on the path of conduction slowed down and arrested the impulse; narcotics produced a temporary stoppage, and poisons permanently abolished it. He had been able to produce an artificial paralysis in the plant nerve, which was cured by applying the same treatment found effective in the removal of paralysis in the animal. Bose gave demonstrations by means of his "resonant recorder," whereby the plant automatically inscribes the speed of its nervous impulse. He had found the perception or latent period of the motor organ of *Mimosa* to be six one-hundredths second. Fatigue prolonged the latent period; when excessively tired, the plant lost its power of perception, which was regained only after half an hour's absolute rest. In stout specimens the speed of reaction was sluggish, whereas a very thin specimen attained its acme of excitation in a very short time. A plant protected under glass from the stimulating buffets of the elements looked sleek and flourishing, yet in reality it was flabby, its nervous power remaining undeveloped. But when a succession of blows fell on this effete specimen, the shock created nervous paths and wakened it up into activity. Bose had been able to localize the plant nerve by two independent methods: first, by the electric probe; and, secondly, by selective staining. He had discovered a highly active and rapidly oxidizable substance in the quickly contractile pulvinus of *Mimosa*, whereas it was absent in the inactive and insensitive pulvinus of the ordinary bean plant. In the leaf stalk of *Mimosa*, four nerves led from the four subpetioles to the four quadrants of the pulvinus, each of which had a distinct motor function. If one of the four subpetioles was stimulated, a definite impulse was sent along the particular nerve to stimulate its own quadrant. But energy was conserved at the center, and the outlying organs were quickly adjusted to meet any crisis. But one advantage secured by such a highly elaborated nervous system was the coordinated reflex by which the leaf surface was adjusted perpendicularly to the incident light, so as to insure the largest amount of radiant energy for photosynthesis. Another important function was the transmission of a rapid message to the motor organ for quick reaction in avoiding threatened danger. Large patches of ground in the tropics are covered by *Mimosa*. When one of the vivid green leaves is trampled on or bitten by grazing cattle, a nervous impulse is sent through the plant, the leaves fall and press themselves against the ground, and the leaflets also close. A patch of vivid green is rapidly transformed into thin lines of dull gray unnoticed against the dark ground. The plant thus saves itself literally by "lying low" and making itself invisible.

Birth Control Discussed in the House of Lords

In the house of lords, Lord Buckmaster moved that the government be requested to withdraw all conditions imposed on welfare committees for the purpose of causing the withholding from married women of information when sought as to the best means of limiting their families. The control of birth was, he said, being extensively practiced by the well-to-do, and it was only among the poorest and the most ignorant that this knowledge had not permeated. In 1,000 married people under the age of 50, the birth rate for schoolmasters was 93; for clergymen of the Church of England, 100; for clergy of all denominations, about 102; for physicians and professional men, from 103 to 105; for skilled laborers, 153, and for unskilled laborers, 247. The standard of intelligence measured in the same way by examination of the children in the schools showed a decreasing scale of intelligence, which was in the exact inverse ratio to this standard of birth rate. The ministry of health provided money to assist welfare centers set up by local authorities, and to enable help and advice to be given to women expecting children, and to women who had young children. But an express prohibition prevented the information from being given as to the means by which future births might be prevented. Should that state of things, not merely in the interests of justice but in the interests of the race, be allowed to continue? Many people deplored the fact that birth control was exercised by the well-to-do, but it was no use weeping over lost battlefields. The reason was this: It was not, as some said, that women were selfish and men were worthless and sought nothing but pleasure, but it was a much higher thing—the increased respect for the sanctity of life, and the desire of people to see that their children were not pressed out by the illimitable competition of unrestricted numbers. It was inspired by the hope that parents would be able to make for their children a better place in the world than they themselves once filled. The better and more thoughtful people were limiting their children, and the sickly, the diseased and the underfed were reproducing at a rate nearly double that of anybody else. He asked that duly qualified physicians should not have their discretion fettered in giving advice. The idea that economically, under all circumstances, the population ought to be reproduced was long since dead. Children were no longer to be treated as fodder for the production of big profits in the balance sheets of manufacturers. With regard to the argument that limitation of the birth rate meant descending in the scale of nations, he asked whether nations were to be tested by their fecundity, like rabbits. It was not numbers that would win the next war, but brains. As to the deep-rooted religious objection as to limitation, he was unable to understand its grounds. It was said that the right course was for men and women to exercise self-restraint, and that abstention would solve the difficulty. The doctrine of abstention was a mischievous doctrine and would lead to the shattering of more homes than any of the causes they had heard denounced in that house.

For the government, the Marquess of Salisbury said that he approached the subject with great diffidence. In trying to remedy the sorrows with which they sympathized, they must be careful that they did not strike a vital blow at a work of service which was doing infinite good to the poorest class. Lord Buckmaster would strike a fatal blow at the maternity and child welfare movement. He was proposing to introduce into its purview a subject that was alien and in the highest degree controversial. Birth control might be useful and necessary, but the kind of people interested in the one movement were not necessarily interested in the other. It would profoundly shock a large number of those engaged in the voluntary work at child welfare and maternity centers if birth control were brought within their purview. The feeling on this subject was not confined to the Roman Catholic Church. It was shared by a large number of religious bodies. Supposing a large number of these voluntary workers who agreed with the Roman Catholic Church or with other churches on this matter should resign their work at the child welfare and maternity centers, what would become of this highly successful movement? For these reasons the government could not support the motion. Birth control was not confined to people whose health dictated that they should not bear more children. It was largely supported by women who probably could have children but preferred not to have, women who preferred their own ease.

In the discussion that followed, the lord chancellor pointed out that the house was not asked to express any opinion for or against birth control, or to say whether propaganda in favor of birth control should or should not be lawful. The resolution was not confined to women who sought advice on the ground of health: it extended the right to information to all married women. Moreover, it would empower a nonmedical member of the committee to give advice. The ministry of health intended that in any case in which it appeared to the committee that further conception might be dangerous to health, the person should be referred to the physician attached to the welfare center. The advice must be medical. Lord Buckmaster then said that there was a misapprehension as to the purpose of the motion. It was never his intention that information should be disseminated broadcast through unqualified people. The government did not object to the motion if he would only introduce the words "through the medical officer." He was quite willing to do so, but it was clear from the trend of the debate that the motion was opposed not on this ground, but on the ground that the information ought not to be distributed at all. He was perfectly willing that there should be medical control, but he was not willing that a physician should be put in charge of one of the most delicate and important medical subjects and that then his discretion should be fettered. The motion was carried by 57 votes to 44.

GENEVA

(From Our Regular Correspondent)

May 25, 1926.

Fibrous Pulmonary Tuberculosis

In a clinical lecture delivered at the University of Strasbourg, Prof. Dumarest stated that fibrous pulmonary tuberculosis was common and almost invariably overlooked by the physician, the diagnosis being made only by radiology. Fibrous tuberculosis is benign rather than curable, but it may remain quiescent for a long time. Pregnancy does not influence it, while its treatment is the same as in other forms of pulmonary tuberculosis.

Marienbad

The high court of justice in Prague has just published its decision on the future control of the mineral springs at Marienbad. As is well known, the Czechoslovak land office, in its redistribution of land by the seizure and breaking up of large estates, encountered strong opposition from the German monastery at Tepl, to which all the mineral springs and much property of this watering place belong. The decision reached is a compromise, which leaves certain property, including the Central Bath and Central Park, in the hands of the monastery, while the Kreuzbrunnen and the Rudolph and Ferdinand springs will be taken over by the state.

Sex Determination

Some work on the determining causes of sex is being done by Dr. E. Trottet at Bern. Experiments undertaken to date to influence sex may be divided into five categories, not always well defined: (1) surgical means, as Trottet's work in unilateral castration; (2) physical means, by influence of heat or light; (3) chemical means, such as injections of alcohol; (4) physiologic means, such as increased or decreased nutrition of the ovum; (5) means which are called chemicophysical on account of their peculiar action, such as epinephrine, choline and lecithin. Trottet's experiments with epinephrine may be termed chemicophysiologic. One of these resulted in extremely interesting data. Injections given during the first fifteen days of intra-uterine life in a rabbit gave a surplus of more than 20 per cent of males over females. More remarkable still is that of twenty-five litters, twenty-one had males in the majority; in two, females predominated, and in two the number of males and females was equal. Comparing these results with other experiments, it is evident that the effects of epinephrine manifest themselves between the tenth and fifteenth days of intra-uterine life. Egli and Coert's experiments show that differentiation of the sexes begins, in the rabbit, on the twelfth day and is marked between the fifteenth and eighteenth days. Kowalesky's experiments show that the favorable moment for influencing the sex is extremely short. In the guinea-pig it is between the fourteenth and fifteenth day of gestation; in the rabbit, epinephrine has no influence during the first five days of gestation. Trottet says that these conclusions are correct and he is able also to state that epinephrine is without action during the first ten days of intra-uterine life. The most favorable moment for influencing the sex with epinephrine in mammals is the moment when the genital glands begin to differentiate themselves.

Epinephrine is vasoconstrictive, especially on vessels of small caliber, and it is a question whether or not it is this property which exercises its influence on the development of the sex. Trottet believes that it is. Apert's experiments tend to prove that epinephrine influences the sex in favor of males, while Kowalesky's conclusion is that sex is determined by the oxygen content of the embryo's food. Food rich in oxygen produces females, while a low oxygen content produces males. Following an injection of epinephrine there is considerable vasoconstriction of the minute vessels, and hence a reduction of the placental circulation as well as that of the fetus. Although the maximum duration of the action of epinephrine is four hours, according to Trottet, it may be that by its vasoconstrictive action epinephrine causes defective placental blood circulation, and the resulting reduction of the oxygen supply hinders the development of the female genital organs. Hence Trottet and Kowalesky are in accord, although they arrive at their conclusions by very different routes.

MADRID

(From Our Regular Correspondent)

May 2, 1926.

Unveiling of Cajal's Statue

In El Retiro, the historic and most beautiful park of Madrid, a monument by the sculptor Victorio Macho has just been erected to Cajal. Macho has shown originality. A pond fed by the Spring of Life and the Spring of Death lies before a wall, which opens in the center to make room for a statue of Wisdom. Cajal's statue overlooks the water. The head especially is an excellent likeness. The king, the premier, all learned societies and government officials attended the unveiling, as well as a large crowd of students and admirers of Cajal as a scientist.

The New Public Health School

The development of the Alfonso XIII Immunology and Serotherapy Institute and the new King's Hospital for Infectious Diseases paved the way for the organization of the National Public Health School. The king again attended the dedication. Dr. Murillo, the director general of public health, pointed out the sanitary advances made in Spain during the last decades. The Public Health Service has a modern set of regulations, a force of provincial sanitary inspectors, a complete port and border quarantine system, sanitary brigades, venereal dispensaries, an antimalarial and antituberculosis organization, a number of tuberculosis sanatoriums, a child welfare institute and a drug control institute. The death rate has decreased from 29 per thousand in 1900 to 19 in 1924, meaning a reduction of 10 in the present century.

The National Public Health School will train the regular sanitary corps. In addition, it offers special courses for auxiliary and subordinate employees, such as nurses and disinfectors. Graduate teaching for physicians, engineers, architects, veterinarians and chemists, also is offered. Dr. Murillo favors specialization in health matters, but on a medical basis. "I cannot approve," he said, "a tendency born in America and introduced in some schools there, namely, the creation of a sanitary profession separate from the medical career. Without an anatomic and clinical background, it is impossible to understand disease or master prevention. Anything else leads to empiricism. This school will be guided by medical thought, and its teachers and executive officers will be physicians, although the aid of other professions will be solicited. In Spain as elsewhere, physicians will eventually make their choice between giving their full time to public health or to private practice."

A Gold Medal to Dr. Pulido Fernández

The Physicians' Society of Madrid has bestowed a gold medal on Dr. Pulido Fernández, perpetual secretary of the National Academy of Medicine. Dr. Bauer, the president of the society, reviewed Dr. Pulido's efforts on behalf of the insane, the sick, the blind, children and especially the work which has popularized Pulido's name abroad, his endeavors to reestablish old ties with the descendants of the Jews who were expelled from Spain by the Catholic kings and still speak Spanish.

Medical Matters in Argentina

Dr. Slocker, chief surgeon of the Rubín Institute, has delivered a lecture at the National Academy of Medicine on his recent trip to Argentina.

Recent hospital enlargement has increased the number of available beds in the city hospitals from 5,000 to 12,000. In addition, there are about 3,000 beds in the Spanish, Italian and other foreign hospitals. The Rawson Hospital was practically rebuilt as a whole. In the Clinical Hospital, Dr. Arce has converted his service into a surgical institute, using the 4,000,000 pesos (about $1,600,000) and 700,000 pesos (about $280,000) appropriated for the installation and maintenance, respectively, which he secured during his tenure as president of the university and member of congress.

A number of Spanish physicians have recently given lectures in the Buenos Aires medical school. Among them is Dr. Río Ortega, discoverer of the microglia, whose technic is now generally used there. The anatomic institute was created by a Spaniard, Dr. Avelino Guitérrez, who has also organized the Cajal chair. This will be occupied every year by a prominent Spanish scientist. Another Spanish professor, Dr. Pedro Ara, was engaged for three years as professor of anatomy in the Cordoba University, as the Argentinians found the specimens he exhibited at the Seville Medical Congress superior to any they had seen in either Europe or America. Medical research seems to be developing unusually well, as the munificent salaries paid attract competent workers.

Argentine physicians occupy in politics a well deserved prominence, which they turn to account to secure proper appropriations for hospitals and health purposes. Foreign physicians, including Spanish, must take a full series of examinations, spread through a four year period, and pay 3,000 pesos (about $1,200) for dues. Only in one province (Cordoba) are foreign physicians allowed to practice, pending their licensing. In unhealthful districts, such as Tucumán, foreign physicians are allowed to practice, but at a salary, and can accept no private fees.

In Argentina, no foreign professional men are needed, as their school can fill all demands. Practically every medical position in the Spanish societies and institutions is filled by Argentinians, mostly of Spanish extraction. A few years ago, an attempt was made to establish reciprocity agreements among the several South American republics and Spain, but Argentina, Chile and Uruguay demurred. Dr. Slocker pleaded for a modus vivendi, granting Spanish physicians who have resided at least five years in Argentina the same rights enjoyed by Argentine physicians trained abroad, or authorizing them to practice in towns under 5,000 inhabitants, and anywhere, provided they have been employed by the government more than five years.

VIENNA

(From Our Regular Correspondent)

May 12, 1926.

The Seventieth Birthday of Professor Freud

As the seventieth birthday of Siegmund Freud, the founder of psychanalysis, approached, his friends and pupils arranged for special ceremonies, although it was evident that the central figure would gladly have dispensed with display. Freud has spent his whole life in Vienna. He had to pass through the usual struggle with the forces of misunderstanding, ignorance and malice before he came to be recognized, and his doctrines were accorded full honors in foreign countries before they were accepted at home. In 1895, he published in collaboration with Dr. Breuer a small treatise entitled "Studies on Hysteria," which contained an exposition of the fundamental principles of psychanalysis, as demonstrated on a female patient. Freud showed in that treatise that, in the manifestations of hysteria, forgotten, or at least suppressed, conceptions or ideas played a predominant part. In his "Dream Interpretation," which appeared in 1900, he showed that "the subconscious mind" determines all our thoughts, acts and expressions of instinctive impulses. That demonstration opened up the way to an understanding of the normal psychic life and made clear also the manifestations of the pathologic psychic life. The treatises on "Witz und Unbewusstes," "Massenpsychologie," "Das Ich und das Es," and "Jenseits des Lustprincips," mark the milestones in the development of the system. The Psychanalytic Society, founded by Freud, is closely associated with allied societies in Germany, France, England, Italy and Spain. This organization has helped to demonstrate to the medical profession the significance of sex in the psychic life, just as researches on symbolism and perversion have furnished an insight into the problems of neurosis. On Freud's seventieth birthday, all the newspapers of the city, at the request of their readers, published popular articles on the nature and methods of psychanalysis.

Celebration in Honor of Professor Eiselsberg

Prof. A. Eiselsberg, Billroth's greatest pupil, has held the position of head of the First Surgical Clinic in Vienna for a period of twenty-five years, in honor of which anniversary a special celebration was held. Professor Clairmont of Zurich, Professor Marburg of Vienna, and Professor Sauerbruch of Munich emphasized the great importance of Eiselsberg as teacher, investigator and man. A number of special publications in commemoration of the day and which dealt with Eiselsberg's work were presented to him.

The Odor Emanating from the Sick

In an article in the daily press, Dr. Valentus discusses the fact that the physicians of antiquity—and also careful observers among modern physicians—were able to reach diagnosis through their sense of smell. Professor Chvostek, among others, has stressed the fact that the sense of smell should play a dominant part at the bedside. The odors of acetone in severe diabetes, of ulcerating carcinoma of the rectum or of the breast, and of cancer of the larynx or of the tongue, are well known. Many physicians know the odor of a gumma of the nose, which resembles the fetor of ozena. Many laymen are familiar with the odor of ozena. Experienced practitioners call attention to an odor given off by typhoid patients, which is, however, not always noticeable. Icterus patients have an unpleasant, easily recognized odor about them, while a room full of scarlet fever patients smells like the cages of wild animals. Hyperhidrosis pedum as well as other marked sweat secretions have a well known odor, but not many are aware that tuberculous persons give off a peculiar odor. The odors of carious teeth, of suppurating bone injuries, or of ulcus cruris are known to many. Especially, during the war, the odor of pus was familiar to all who frequented the surgical hospitals. The fetid sputum in many forms of lung disease (gangrene, bronchiectasis), and the odor of gangrenous wounds or of cholesteatoma of the ear are diagnostic. If, as Chvostek demands, one begins at the outset of medical study to note peculiar odors, much information may be secured through the nose.

Trichinosis, Rabies, Glanders and Influenza in Austria

Reports of the public health service show that, in the last covered. The origin of the infection lay in a shipment of six months, in Vienna, a few cases of trichinosis were dissmuggled pork. The outbreak of glanders was confined chiefly to a rural district in the eastern provinces of the republic. There were seven cases, five of which ended fatally. In all cases the diagnosis was reached late, but the original focus was eliminated. There has been a considerable increase of rabies. For some unascertained reason, the control of hydrophobic animals has been lax of late. As a result, several persons have died, in spite of the fact that Pasteur treatment was administered soon. Not dogs but other domestic animals have been the offenders. There has been an epidemic of mild influenza in Austria since the middle of February. It appears either as an inflammation of the upper respiratory passages, or as "gastro-intestinal" influenza. Ear complications are common, especially in young children, but they heal quickly.

BERLIN

(From Our Regular Correspondent)

May 1, 1926.

Congress of Internal Medicine

At the annual session of the Deutsche Gesellschaft für innere Medizin, held in Wiesbaden, April 12-15 (The Journal, May 29 and June 5, pp. 1710 and 1782), the principal paper on the third topic, the pathology and therapy of asthma, was presented by Professor Klewitz, chief physician at the Medizinische Universitäts-Klinik in Königsberg.

We do not know for a certainty how an attack of asthma is brought about. It is probable that the cause is a spasm in the muscle layers of the bronchi, which may be produced in animals by the same substances which in man may bring on an attack. The spasm contracts the lumen of the bronchi, and the effect is still further increased by viscous secretions and congestion of the mucous membranes. The expiration period is lengthened, and the rhythm of breathing undergoes disturbances. We must distinguish two groups of patients. By far the majority are hypersensitve to definite substances. Such hypersensitiveness may, through transference of blood, be artifically transmitted from man to man or from man to animals. The number of substances that may produce an attack of asthma is extremely large. Among others are articles of food, substances produced by animals, chemicals, parasites, and, finally, unknown atmospheric factors, which are referable, for the most part, to plants, parasites or animals. In all these manifestations, inborn constitutional factors exert a predominant influence. In the second main group of asthma patients, hypersensitiveness plays no part. Here we have to do with disturbances of the autonomic nervous system, which is not subject to the will, but which reacts to slight psychic, chemical or physical irritants by a spasm of the bronchial muscles and a stimulation of secretions. With that is associated a functional weakness of the respiratory processes controlled by the central nervous system. The diagnosis seeks to establish the injurious substance which in the first group is the cause of the attack. The treatment consists in keeping the patient away from the things that precipitate an attack. This becomes difficult when several different foods are known to bring on the attack. Often a change of occupation becomes necessary. Of late years, attempts have been made gradually to desensitize hypersensitive persons by cautious injections of extracts of the injurious substances, but the results have not been satisfactory. Better results may be secured by nonspecific injections (peptone, tuberculin, sulphur, milk). Roentgen-ray treatment may accomplish a complete cure. In an acute attack, the most reliable remedy is epinephrine. Attempts have been made, also, in late years, to cure asthma by the operative removal of the sympathetic nerve in the neck.

During the discussion, Professor Storm of the Netherlands said that most asthma patients who are hypersensitive to any substances whatever react to injections of an extract of human dandruff, to which normal persons do not react. In high plateau regions, asthma patients are usually free from attacks. Storm ascribed this to the absence of irritating substances in the atmosphere of elevated regions. In chambers to which air had been conducted from the upper air regions, 75 per cent of the hypersensitive patients remained free from attacks. In these 75 per cent, substances floating in the air are the cause of the disease, and only in from 5 to 8 per cent is the causative factor animal hairs or food. The injurious substances in many homes are animal or vegetable parasites.

Veil of Munich observed an ionic activity in asthma which could be influenced by psychic treatment and which was the expression of a universal disturbance of the function of the vegetative nervous system. Localization in certain brain centers has been shown. Berger of Innsbruck rarely noted in hay-fever a utilizable cutaneous reaction, but occasionally secured good results from desensitization. Hofbauer of Vienna observed disturbances of nasal breathing before an asthmatic attack. He sought to reproduce these conditions in animals. Kammerer of Munich secured relatively frequent reactions with extracts he prepared himself; intracutaneous inoculation with dandruff extract effected desensitization. Leschke of Berlin found in only 10 per cent of the cases that asthma was occasioned by foodstuffs or animal hairs. A large majority of patients are hypersensitive to room dust and to infectious particles floating in the air. An allergen-free room can be dispensed with provided all rooms, and especially the sleeping room, are kept scrupulously free from dust. Asthma is related to disturbance in the midbrain, and is identical with anaphylaxis. In cases of food allergy, a test diet with zwieback, tea, sugar and red wine is recommended. Curschmann of Rostock stressed the psychogenic factor and the constitutional disposition. Calcium therapy and prophylaxis are effective, and also roentgen-ray treatment. In using epinephrine, attention should be paid to possible injuries of the aorta. Laudenheimer of Munich secured in numerous cases successful results with hypnosis, but at the same time breathing exercises were instituted. Psychic traumas were frequently noted in allergic asthma. Stöhelin of Basel expressed the view that also in allergic asthma there is always a nervous component. The treatment must therefore take account of both factors. Erich Meyer of Göttingen recognizes allergic patients by the increase of the serum globulins after the injection of protein and reinjection. Gigon of Basel observed that hypnosis may have an influence on the changes of metabolism. Krehl of Heidelberg pointed out that allergy and psychic influences interact. His of Berlin reported several cases that were allergic to various "tests." Many types could be influenced favorably by spasmolytic agents. Asthma must be viewed quite differently if it is a complication of chronic bronchitis. Attacks in children that do not yield to ordinary treatment are subject to psychic influence.

Wiesbaden's New Institute for Scientific Research in Balneology and Metabolism

The city of Wiesbaden has appropriated 100,000 marks for the erection and equipment and 50,000 marks annually for the support of an institute for scientific research in balneology and metabolism.

Marriages

Richard Gilmore Coblentz, Baltimore, to Miss Mary Knight Compton of Montgomery, Ala., May 22.

Clarence Hayes Glover to Miss Alma Belle Osteen, both of Memphis, Tenn., March 17.

John H. Donovan to Miss Besse Evans, both of Windsor, Ill., May 3.

Deaths

Herbert Nathan Thomas Nichols ⊕ Ahmeek, Mich.; Medical Department of the Tulane University of Louisiana, New Orleans, 1913; formerly assistant in anatomy at his alma mater; at one time government physician among the Eskimos, U. S. Bureau of Education; assistant physician to the Mohawk Mining Company since 1922; aged 47; died, April 5, at Calumet, of septicemia.

Alvord Gates Nichols, Boston; Medical School of Harvard University, Boston, 1922; member of the Massachusetts Medical Society; formerly on the staff of the Peter Bent Brigham Hospital; assistant medical director of the John Hancock Mutual Life Insurance Company; aged 32; died, May 18, of pylephlebitis following an abscess of the appendix.

Frank Paul Summa, Nanticoke, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1913; member of the Medical Society of the State of Pennsylvania; served during the World War; member and past president of the board of education; aged 38; died suddenly, May 13, of heart disease.

William Hilliard Cryer ⊕ Birmingham, Ala.; Medical Department of the Tulane University of Louisiana, New Orleans, 1908; member of the New Mexico Medical Society; medical director and superintendent of the Jefferson Tuberculosis Sanatorium; aged 42; died, April 27, of uremia.

Charles Philadelphus Cathcart, Kansas City, Mo.; Eclectic Medical Institute, Cincinnati, 1872; University Medical College of Kansas City, 1884; member of the Missouri State Medical Association; aged 76; died, April 20, at the Christian Church Hospital, of pernicious anemia.

Arthur Parker Lewis ⊕ Reno, Nev.; College of Physicians and Surgeons of San Francisco, 1900; Spanish-American War veteran; on the staff of the Reno Hospital; aged 51; died, May 26, following an appendectomy, tonsillectomy and the extraction of a tooth.

Ellsworth Orton ⊕ Pontiac, Mich.; Detroit College of Medicine and Surgery, 1892; formerly mayor, city health officer and county physician; aged 60; died, May 17, at the Harper Hospital, of sepsis, following an infection of the throat.

William A. Emens, Trinity, Ala.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1905; member of the Medical Association of the State of Alabama; aged 47; died, April 25, of pneumonia.

Henry B. Lee, Summerville, S. C.; Medical College of the State of South Carolina, Charleston, 1871; for several years member of the state legislature; Spanish-American war veteran; aged 76; died, May 20, of cerebral hemorrhage.

Willet Patterson Hughes ⊕ Bloomsburg, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1897; served during the World War; aged 55; died, April 26, at a hospital in Danville, of ruptured aorta caused by a fall.

Maurice A. Hansen, Osage, Iowa; Central College of Physicians and Surgeons, Indianapolis, 1898; member of the Iowa State Medical Society; aged 52; died, at a hospital in Rochester, Minn., May 10, of intestinal obstruction.

Cyril Gustavus Devron ⊕ Lakeland, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1923; aged 26; died, May 4, at the Lady of the Lake Sanitorium, Baton Rouge, of bronchopneumonia.

Morgan Frederick Mount, Hot Springs National Park, Ark.; Hahnemann Medical College and Hospital of Philadelphia, 1903; member of the Arkansas Medical Society; aged 55; died, May 1, at a local hospital.

Harold Charles Golly ⊕ Utica, N. Y.; Jefferson Medical College of Philadelphia, 1917; served during the World War; on the staffs of St. Elizabeth's and St. Luke's hospitals; aged 32; died, April 20, of heart disease.

George Pierrard Bertholet ⊕ Pawtucket, R. I.; University of Montreal Medical Faculty, Montreal, Que., Canada, 1911; served during the World War; aged 38; died, April 21, of myocarditis and acute nephritis.

Niceus Walker Mayginnes, Tulsa, Okla.; University Medical College of Kansas City, 1884; member of the Oklahoma State Medical Association; aged 70; died, May 20, at a sanatorium in Kansas City.

Hollis F. Sigler ⊕ Pinckney, Mich.; University of Michigan Medical School, Ann Arbor, 1877; past president of the Livingston County Medical Society; aged 72; died, May 10, of cardiovascular disease.

George J. Mahr, Brooklyn; Medical Department of the University of the City of New York, 1895; member of the Medical Society of the State of New York; aged 55; died, May 23, of heart disease.

Isaac Napoleon Porter, New Haven, Conn.; Yale University School of Medicine, New Haven, 1893; member of the Connecticut State Medical Society; aged 61; died, April 10, of cerebral hemorrhage.

Alexander M. Wallingford ⊕ Flemingsburg, Ky.; University of Louisville School of Medicine, 1890; aged 57; died, May 9, at a hospital in Lexington, following an operation on the gallbladder.

Albert Blackburn Prewitt, Carlisle, Ky.; Louisville National Medical College, Medical Department State University, 1896; aged 58; died, May 8, of paraplegia following a long illness.

Edward Lafayette Sperry, Potter Valley, Calif.; Starling Medical College, Columbus, 1881, and Jefferson Medical College of Philadelphia, 1882; aged 69; died, March 31, at Monrovia.

Isaiah E. Hamilton ⊕ Lawton, Mich.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1887; Rush Medical College, Chicago, 1894; aged 62; died, May 12, of heart disease.

Cecil Carl Burnett, South Solon, Ohio; Ohio State University College of Medicine, Columbus, 1916; aged 39; died, May 13, at Columbus, following an operation for gallstones.

Horace Maynard Taylor, Greeneville, Tenn.; University of Tennessee College of Medicine, Memphis, 1901; aged 51; died, May 11, of pneumonia following a cholecystectomy.

Ralph Denniston Dean ⊕ Taunton, Mass.; Medical School of Harvard University, Boston, 1896; on the staff of the Morton Hospital; aged 53; died, May 11, of leukemia.

Franklin K. Berry, Philadelphia, Tenn.; Jefferson Medical College of Philadelphia, 1867; Civil War veteran; aged 84; died, March 20, at Sweetwater, of diabetes mellitus.

Henry Heilemann, Philadelphia; Jefferson Medical College of Philadelphia, 1893; veteran of the Spanish-American and World wars; aged 61; died, May 22, of heart disease.

Louis J. Lautenbach, Crystal Beach, Fla.; University of Pennsylvania School of Medicine, Philadelphia, 1881; aged 65; died, May 19, at Philadelphia, of angina pectoris.

Purvis S. Willson, Owosso, Mich.; Detroit College of Medicine and Surgery, 1893; for six years member of the Owosso School Board; aged 57; died, May 10.

William E. White, Burlington, Wis.; Milwaukee Medical College, 1897; member of the State Medical Society of Wisconsin; aged 64; died, May 9, of carcinoma.

Mary Clagett Cornell, Chicago; Hahnemann Medical College and Hospital, Chicago, 1901; aged 61; died, May 12, of bronchopneumonia and chronic myocarditis.

David F. Hanna, Gallatin, Mo.; Medical College of Virginia, Richmond, 1875; member of the Missouri State Medical Association; aged 74; died, May 13.

George Hill Carter, Lenoir, N. C.; Medical Department of the University of the City of New York, 1877; aged 70; died, April 19, of cerebral hemorrhage.

Percy Thomas Henry Wythe, Hamilton, Ont., Canada; Queen's University Faculty of Medicine, Kingston, 1920; aged 29; died, April 20.

Richard I. Vines, Longville, La.; Memphis Hospital Medical College, 1909; aged 52; died, April 12, of carcinoma of the stomach.

Charles Alexander Page, Oakville, Ont., Canada; Trinity Medical College, Toronto, 1898; aged 50; died, March 19, of pneumonia.

William Carroll ⊕ Philadelphia; Jefferson Medical College of Philadelphia, 1863; aged 91; died, May 3, of hypostatic pneumonia.

Donald Johnson, Marion, Mich.; Trinity Medical College, Toronto, Ont., Canada, 1891; aged 63; died, May 4, of pneumonia.

William H. Hayes, Springfield, Mo.; Cleveland Medical College, 1860; aged 89; died, March 31, following a long illness.

Frank W. Diemer, Springfield, Mo.; Missouri Medical College, St. Louis, 1891; aged 58; died, May 11, of nephritis.

Robert M. Sproul, Lima, Ohio; Medical College of Ohio, Cincinnati, 1880; aged 79; died, May 12, of heart disease.

Frank Eugene Baldwin, Peoria, Ill.; Rush Medical College, Chicago, 1897; aged 51; died, May 16, of pneumonia.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

ALLONAL NOT ACCEPTABLE FOR N. N. R.

Report of the Council on Pharmacy and Chemistry

Allonal is a preparation containing a combination of allylisopropylbarbituric acid and amidopyrine mixed with free allylisopropylbarbituric acid and an excess of amidopyrine. The combination between allylisopropylbarbituric acid and amidopyrine is readily decomposed into its components, and the firm's claims are based on the assumption that Allonal contains these two ingredients. The claim is made that allylisopropylbarbituric acid, "the new and distinctive component," possesses a greater hypnotic power than any of the other well known hypnotics of the barbituric acid series, but that it is relatively less toxic. The Council finds that the evidence cited by the firm does not substantiate this claim, and concludes that Allonal must be considered as the result of an effort to combine in one preparation the hypnotic properties of a member of the barbituric acid series and the analgesic properties of amidopyrine. The firm publishes long lists of conditions said to have been relieved by this combination, the only individualization being the recommendation of "1 to 2 tablets" for some and of "2 to 4 tablets" for others. In none of the clinical reports submitted by the firm does the author refer to observations in which either component of the drug was used separately or in which the relative proportion was varied: the Council holds that the absence of such data deprives these reports of much of their value as arguments for the use of Allonal. The new hypnotic, allylisopropylbarbituric acid, for which great superiority is claimed, is thus made available to physicians only in fixed combination with an antipyretic and analgesic drug which may not be needed and which in itself frequently causes untoward symptoms. The Council finds Allonal unacceptable for New and Nonofficial Remedies because of unwarranted therapeutic claims, nondescriptive name, and lack of satisfactory evidence that the administration of a mixture of allylisopropylbarbituric acid and amidopyrine in fixed proportions is rational, and has authorized publication of the following report.

W. A. PUCKNER, Secretary.

Allonal was introduced by the Hoffmann-LaRoche Chemical Works, New York, with the claim that it was a new synthetic compound of allylisopropylbarbituric acid and phenyldimethyldimethylaminopyrazolon (amidopyrine) made by fusing together the two components. Subsequently it was shown that Allonal was not a definite chemical compound; evidence was submitted by the firm, however, favoring the existence in Allonal of a combination of allylisopropylbarbituric acid and amidopyrine (in different ratio than originally claimed) mixed with free allylisopropylbarbituric acid and an excess of amidopyrine; as in the case of other salts of weak acids and weak bases, the presence of water or dilute acid resolves the weak combination into its components.

The A. M. A. Chemical Laboratory has reported that the amount of allylisopropylbarbituric acid and amidopyrine in Allonal Tablets (as sold on the market) is not in molecular ratio of 1 to 2, but contains an unequivalent amount of ingredients. Whether Allonal actually contains a molecular compound of allylisopropylbarbituric acid and amidopyrine is of little moment since, even if the compound does exist, it breaks down easily in water or 0.2 per cent hydrochloric acid and acts as a mixture. Moreover, the claims are all based on the assumption that Allonal contains these two ingredients.

The Hoffmann-LaRoche firm stated that allylisopropylbarbituric acid is "the new and distinctive component" of Allonal and that it "possesses a greater hypnotic power" than any of the other well known hypnotics of the barbituric acid series but is relatively less toxic. This and similar statements seemed to imply that although the hypnotic action had been increased by the substitution of certain groups in barbital, the toxicity had not been correspondingly increased. Previous attempts to secure derivatives of barbituric acid of this character having failed, the Council asked for evidence that this had been achieved in the case of allylisopropylbarbituric acid. The firm referred the Council to one paper by Wiki, a paper by Pohl and to two papers by Redonnet as stating that this compound "possesses the same hypnotic action, as, for instance, di-allylbarbituric acid but is distinctly less toxic." Pohl (*Ztschr. f. d. ges. exper. Med.* **38**:520, 1923) reports one experiment (rabbit) in which 0.058 Gm. of allylisopropylbarbituric acid per kilogram given *subcutaneously* caused deep narcosis for eight hours with a fall of temperature of 6.8 degrees; a similar dose of "Dial" caused narcosis of shorter duration. Pohl adds *"Nach Castaldi (Therap. Monatsh.* 1915, p. 54 [should be 454]) *ist Dial zu 0.01-0.02* [Castaldi says 0.01-0.026] *per Kilo für Kaninchen tödlich, die Allylisopropylbarbitursäure somit weit weniger giftig als jenes."* ("According to Castaldi Dial is fatal to rabbits in doses of 0.01 to 0.02 [Castaldi says 0.01 to 0.026] per kilogram; therefore allylisopropylbarbituric acid is much less toxic.") The figures given by Castaldi relate to the toxicity of Dial injected *intravenously*—a fact evidently overlooked by Pohl, Redonnet and the Hoffmann-LaRoche firm. Wiki found the dose of "dial-natrium" containing about 90 per cent of the acid given intra-arterially which arrested respiration and which, according to Wiki, would certainly have caused death had not artificial respiration been employed to be 0.024 Gm. per kilogram; the corresponding dose of the compound of allylisopropylbarbituric acid and diethylamine, containing 75 per cent of the acid, was 0.02 Gm. per kilogram.

One of the papers by Redonnet (*Arch. internat. de pharmacodyn. et de Therapy.* **25**:25 [properly 241], 1920) makes no mention of allylisopropylbarbituric acid. In the other paper (ibid. **30**:321, 1925) Redonnet describes one experiment in which he administered, by stomach to one cat, 0.01 Gm. of the allylisopropylbarbituric acid and to another 0.01 Gm. of Dial per kilogram. The temperature of the first cat fell to 35.3 and the respiration to 30 per minute, whereas the temperature of the other cat (the cat receiving the Dial) fell to 33.8 and the respiration to 12; the absorption, narcotic action, elimination, etc., were similar in the two animals. (It should be noted that the results are just the opposite of those obtained by Pohl; see the preceding.) Redonnet states that these results led the firm of Hoffmann-LaRoche to replace the "Dial" of "Somnifen" by the new hypnotic, thus obtaining a drug of the same activity, but the toxicity of which is a "little diminished" (the author further states that the fatal dose of the new "Somnifen" which contained allylisopropyl compound instead of "Dial," was, for rats, subcutaneously, 1.6 cc. per kilogram, whereas that of the old Somnifen was 1.4 cc.).

The two experiments of Pohl and Redonnet (which, as pointed out above, contradict each other), do not show that there is any significant difference as regards the ratio between the narcotic and the toxic actions of allylisopropylbarbituric acid and diallylbarbituric acid (the two compounds selected by the firm for comparison).

The third author quoted by the firm as having shown such a difference is Wiki (*Arch. internat. de pharmacodyn. et de therap.* **27**:117, 1922). This author has clearly expressed his own views on this subject in the following words (p. 161): "It is impossible for us to draw, from our experiments, definite conclusions as to the superiority of the one over the other" and further, that the diallyl and the allylisopropyl compounds seem to be practically equivalent, both having comparable advantages and disadvantages.

Wiki also made a number of comparisons between the diallyl and the allylisopropyl compounds on the one hand, and barbital and phenobarbital on the other. Since phenobarbital is used to a considerable extent for purposes distinctly different from those for which the other compounds are used, the question of its relative efficiency and safety is of less interest in this connection. Wiki states (p. 160) that to produce simple sleep, four to five times as much of barbital is necessary as of the allylisopropyl compound; he also states

(p. 128) that to arrest respiration 0.15 Gm. per kilogram of the latter and 1.01 Gm. (or 6.7 times as much) of the former is necessary. Wiki also describes experiments in which the animals were kept alive by means of artificial respiration and the administration of the drugs continued until death resulted from circulatory failure; 0.75 Gm. of the allylisopropylbarbituric acid and 3.46 Gm. of barbital (or 4.6 times as much) was necessary. The author also states (p. 129) that to produce anesthesia about five times as much barbital as of the allylisopropyl compound is necessary. Thus, whether the criterion for physiologic action is the production of simple sleep or of anesthesia, and that for toxicity is stoppage of the respiration or of the heart, there is a close parallelism between the physiologic (corresponding to the therapeutic) action and the toxic action; that is, toxic action increases in the same ratio as does the physiologic action. The only significant deviation from this is to be found in comparisons of the simple hypnotic doses with those causing arrest of the respiration (the cause of death unless artificial respiration is maintained): from these it would seem that, whereas only four to five times as much barbital as of the allylisopropyl compound is necessary to cause sleep, about 6.7 times as much is necessary to cause death. Thus, from the standpoint of use as a simple hypnotic (in which physicians are chiefly interested) the advantage lies with barbital.

The only point in which Wiki claims that the isopropyl compound is superior to barbital is in experiments on rabbits in which doses sufficient to cause anesthesia were given; in these he found the blood pressure slightly higher in the case of the animals anesthetized by the allylisopropyl compound than in those anesthetized with barbital (96 per cent, as compared with 84 per cent of the original pressure). Also after doses sufficient to paralyze the respiration (the animals being kept alive by artificial respiration), the blood pressure was somewhat higher in the case of the animals poisoned with the allylisopropyl compound (77 per cent of the original as compared with 55 per cent in the case of the animals poisoned with barbital). In similar experiments on a dog, however, barbital depressed the blood pressure less than did the allylisopropyl compound.

Lepper (*Arch. f. d. ges. Physiol.* **204**:498, 1924) states that dilute solutions of barbital constrict blood vessels, and Redonnet (*Arch. internat. pharmacodyn. et de therap.* **30**:327, 1925), states that barbital in therapeutic doses (in which physicians are most interested) causes a slight elevation of blood pressure; Redonnet quotes Castaldi as stating that the diallyl compound causes only a fall of blood pressure.

Thus, of the four papers cited by the firm in support of their claim that allylisopropylbarbituric acid "possesses the same hypnotic action as, for instance, diallyl-barbituric acid but is distinctly less toxic" the allylisopropyl compound is not mentioned in one; the conclusion drawn in another (the paper by Pohl) is based on an incomplete and misleading quotation (by Pohl) from another author (Castaldi) and shows nothing; a third paper quotes a single inconclusive experiment (which is also in conflict with the experiment of Pohl), and the fourth paper (by Wiki), instead of supporting the firm's contention, contradicts it in essential respects. The work of Fredet and Fabre on "tissue affinity, method and duration of elimination, etc.," has no bearing on the point under discussion, viz., whether in relation to its narcotic power the new compound is less toxic than other members of the barbituric acid series.

Frequent reference is made in trade circulars and the clinical reports, distributed by the Hoffmann-LaRoche Chemical Works, to Allonal as a "Hypno-Analgesic"; the hypnotic feature is especially emphasized at one time, the analgesic at another. The hypnotic action seems to be attributed chiefly to the presence of the "new hypnotic, allyl-isopropyl-barbituric acid," which "is not to be confused with other members of the barbituric acid series which have long been used as hypnotics" (although, as pointed out in the preceding, no evidence has been submitted to show that this compound has advantages over the similar compounds "which have long been used as hypnotics"). Since nothing is said as to analgesic properties of the "new hypnotic," those of "Allonal" are presumably due to the presence of amidopyrine, a drug which has been in use as an analgesic for nearly thirty years. In other words, the effort is made to combine in one preparation the hypnotic properties of barbital and the analgesic properties of amidopyrine. A circular letter begins:

> "Dear Doctor: The value of Allonal for quieting pain has been so thoroughly demonstrated and widely written about that many members of the profession have come to think of it only as an analgesic. Have you tried Allonal for its hypnotic effect? As an hypnotic the action of Allonal is splendid."

A later circular letter begins:

> "Suppose you had a patient suffering greatly and unable to sleep because of pain, and Morphine had failed to bring relief . . . would you not be glad to learn of a new nonnarcotic drug that had been tried by many members of the profession and found to be highly effective in such cases?"

And then again:

> "Queer, isn't it, how many people lie awake for hours at night fighting to go to sleep? Physically tired but mentally alert—too alert for sleep. . . . In these cases a reassuring talk on the part of the physician and just one Allonal tablet upon retiring usually gives very satisfying results."

And so on. Long lists are given of conditions in which Allonal has been successful, such as: "Multiple Neuritis," "Rheumatoid Arthritis," "Tabetic Pains," "Agitated Depression," "Paralysis Agitans," "Drug Addiction," "Alcoholic Poisoning," "Arteriosclerosis," "Paresis," "Trifacial Neuralgia," "Polyarthritis," "Tic-douloureux," "Postoperative Pain," "Inflammatory Glaucoma," "Cellulitis," "Nephritic Pain," "Paroxysmal Headache," "Carcinoma," "Chronic Asthma," "Chronic Pancreatitis," "Colitis," "Intercostal Neuralgia," "Neuralgia," "Mental Disorders," "Persistent Hiccough," "Gastric Crises in Tabes," "Mild and Severe Insomnia," "Menstrual Pains," "Neuritis," "Chronic Prostatitis," "Luetic Headache," "Insomnia without pain," "Painful Menstruation," "Trigeminal Neuralgia," "Bell's Palsy," "Hodgkin's Disease," "G. U. Conditions," "Dysmenorrhea," "Nervous Manifestations of Pregnancy and the Puerperium," "Dementia praecox," "Cerebrospinal lues," "Abscessed tooth," "Hemorrhoids," "Melancholia with drug addiction," "Carcinoma of the rectum," "Chronic asthma," "Mucous colitis with severe peristaltic contractions," "Headache," "Hemiplegic insomnia," "Post-operative Neuralgia," "Alcoholic Excesses," "Pelvic Pain in Women," etc., etc.

All of these and many other conditions are listed as having been relieved by this combination, in fixed proportions, of an hypnotic and an analgesic drug; the only individualization suggested is "1 to 2 tablets" for some and "2 to 4 tablets" for others. The Council believes that physicians should consider the needs of the individual patient to a greater extent than this: to give perhaps more of the hypnotic and less of the pain-relieving drug "in cases of insomnia without pain" and more of the analgesic in "carcinoma of the rectum," etc. In none of the clinical reports submitted by the firm does the author refer to observations in which either component of the drug was used separately or in which the relative proportion was varied; the absence of data on this subject deprives these reports of much of their value as arguments for the use of Allonal. The Council has long held that in the case of pharmaceutic preparations and mixtures "it is important that the prescriber should be *reminded constantly* of their potent ingredients."

Concerning the prescription of two drugs in the proper proportion, the firm states:

> "If the Council believes that the fixed proportions of Allyl-isopropyl-barbituric acid and Amidopyrine in Allonal are irrational . . . we are again sorry. We must state, however, that what seems in the Council's eyes irrational is only so when viewed from a purely idealistic standpoint; from a practical standpoint, unless the profession should be thoroughly enlightened by educational work on the part of some one properly qualified, unfixed proportions would certainly *prove a great deal more irrational.*"

The new hypnotic for which great superiority is claimed *has not been made available*; if the physician desires to use it *he is forced to give at the same time* amidopyrine, an antipyretic as well as analgesic drug which may not be needed and which of itself not infrequently causes untoward symptoms.

In this connection, the view of Redonnet (to whose writings the firm referred the Council for further information on the barbituric acid hypnotics) may be cited. Redonnet in his latest publication on this subject (*Arch. internat. de pharmacodyn. et de therap.* **30**:324, 1925) remarks: "Some have thought to augment the activity of these hypnotics [of the barbituric acid series] in associating them with various medicaments, especially with the analgesics and the alkaloids of opium." Among such mixtures of combinations are mentioned: "Veronacetin, Somnacetin, Veramon, Quiesan, Quieonal, Dialacetin, Allonal, etc."; after speaking of certain disadvantages of the mixtures of the barbituric acid hypnotics with the synthetic analgesics (such, for example, as disturbances of the heat regulating centers), he adds, "In cases of insomnia caused by pain better results may, however, be obtained with these preparations than with the hypnotics alone; but we believe that it is preferable to administer them separately in order to better graduate the respective doses of each medicament."

The Council finds Allonal unacceptable for New and Nonofficial Remedies because (1) the therapeutic claims advanced are deemed unwarranted by the facts; (2) the name is not descriptive of its composition, and (3) there is no satisfactory evidence that the administration of a mixture of allylisopropylbarbituric acid and amidopyrine in fixed proportion (or of a feeble chemical compound of these two that behaves in the stomach like a mixture) is rational.

The Council is prepared to consider the acceptance of allylisopropylbarbituric acid when it is offered in pure form and with claims that are supported by adequate evidence.

Correspondence

UNWARRANTED USE OF PHOTOGRAPH BY ANGIER CHEMICAL COMPANY

To the Editor:—A few days ago I received in my mail an advertisement of an emulsion of cod liver oil, made by the Angier Chemical Company, Boston. My photograph is on the cover of the advertisement and my name under it. No explanation is given. The inference may be that I am connected with the exploitation of this emulsion. The truth is that this is the first time I ever heard of it; I do not know where the photograph was secured and never gave permission for its use. It is, to say the least, an unwarrantable invasion of privacy, but it also lays me open to suspicion of being interested in the sale of a proprietary remedy. The advertisement has been widely circulated and apparently sent simultaneously to all parts of the country, so that any protest which might be made would come too late. I wish nevertheless to register a protest against this form of publicity, and I hope that physicians in general will frown on it until commercial companies learn that such methods do them more harm than good.

Alice Hamilton, M.D., Boston.

NEWSPAPER PUBLICITY REGARDING "ADJUSTMENT CURES" AT CORNELL UNIVERSITY

To the Editor:—It has come to my notice that there has been widespread newspaper publicity in regard to certain alleged discoveries at Cornell University of a cure for rheumatism, sciatica and numerous other diseases, and the reaction of the osteopaths, chiropractors and others to these newspaper articles makes it seem wise that there should be a statement of the facts.

An alumnus of the university and another physician of New York State, at their own request, were permitted to work in the anatomic laboratory of the Ithaca Division of the Cornell University Medical College. They desired to determine whether there was any anatomic basis that would explain a large number of symptoms which they claimed were relieved by certain manipulations which they performed. It was their opinion that these varied symptoms were caused by "sacroiliac dislocations" and that their manipulations "reduced" these.

No member of the staff of the medical college was engaged in the investigation, and the physicians conducting the inquiry were unable to demonstrate any anatomic basis that would explain either the symptoms or the results that they claimed to obtain. I do not know the source of the newspaper story.

Abram T. Kerr, Ithaca, N. Y.
Professor of Anatomy, Cornell
University Medical College.

"OXYGEN TREATMENT OF MALIGNANT EDEMA"

To the Editor:—In The Journal, May 1, appeared a clinical note on the "Oxygen Treatment of Malignant Edema," by Dr. R. P. Roantree, Elko, Nev. The author stated that he did not find in the literature any mention of a patient treated in this manner.

It is only fair to give the credit of the method to Professor Thiriar of Brussels, who described it as far back as 1899. Since that time the oxygen treatment has been extensively used in various pyogenic conditions, but has met with special favor in the treatment of the anaerobic infections. During the World War we found it efficient when gas gangrene was a prevalent complication. During the last years of the war it was not used frequently because prophylaxis was successful and because better curative methods had been found.

The literature on the subject is quite extensive; may I refer to these few papers:

Thiriar, Jules: De l'emploi de l'oxygène en chirurgie, *Bull. Acad. roy. de méd. de belgique,* 1899.

Wohlgemuth, Heinz: Der Wert des Sauerstoffs in der Chirurgie, in Handbuch der Sauerstofftherapie, Berlin, 1906.

Phipps, E. F.: De l'emploi en thérapie chirurgicale de l'oxygène, Thèse de Paris, 1916.

Charles L. Janssen, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DIAGNOSIS OF SCARLET FEVER

To the Editor:—We are having an epidemic of scarlet fever, and it is so mild that it is sometimes impossible to say whether it is scarlet fever or not. I had a sound boy of 12 in whom I diagnosed scarlet fever on the strength of a rash on his chest, a suggestive tongue and a slightly red throat. He was slightly ill, and his mother would hardly accept my diagnosis. A few days later she had the same symptoms. Then a younger brother got scarlet fever from head to foot, and they accepted the cases as scarlet fever. Then a bigger brother got slightly sick. The boy first taken ill returned to school, and two days ago fell and struck the back of his head on a rock. His wound pained him when I saw him; he vomited, had headache and had fever to 104. I attributed this to the wound, which had scabbed over, and which on being opened yielded pus. Now comes the part that puzzles me: Today he has a typical scarlet rash all over, a suggestive tongue and a red throat. Is it possible to have scarlet fever twice so close together?

A. C. Muller, M.D., Durham, Calif.

Answer.—It is impossible from the information given to clear up all the points raised. The possibility of concurrent epidemics of scarlet fever and German measles must be considered. The presence of a moderate polymorphonuclear leukocytosis and hemolyzing streptococci in the throat would speak in favor of scarlet fever. In scarlet fever a positive Dick test before or at the beginning of the sickness, with a negative one after recovery, is usual, while this would not be true in German measles. Two attacks of scarlet fever in a person may occur, and there is no arbitrary time that must elapse between them. A second attack, usually spoken of as a recurrence, may occur after about a month.

HAIR DYES

To the Editor:—In The Journal, Nov. 14, 1925, p. 1578, two prescriptions were given for dyeing the hair. It is true that they dye, but the hair does not get quite dry and it stains afterward. Is there any special technic for use?

F. Oduber, M.D., Pto. Cumarebo, Venezuela.

Answer.—The moisture is probably due to the glycerin in the first solution. This should be easily removed by washing the hair with water after the use of the second solution. If desired, the first solution may be made up with half the amount of glycerin, which may lessen the difficulty.

SCARLET FEVER AND GERMAN MEASLES

To the Editor:—Scarlet fever cases were reported in three directions from this village, while from the fourth direction came reports of German measles (rubella). My first case occurred early in February and was a mild but typical case of scarlet fever. Fifteen days later a younger brother developed a mild and brief illness which corresponded very nearly to rubella as usually described. April 28, the first child was again showing the symptoms of scarlet fever. Is this second attack a flare up of a hidden infection or a reinfection? There are now about a dozen cases of scarlet fever in this vicinity. Is a papular form of eruption, especially a "goose-flesh" eruption, characteristic of many scarlet fever cases, sufficiently distinctive to be a differential point? Does "goose-flesh" attract attention in rubella?

Assume that both diseases are present in a locality and that the prevailing scarlet fever is mild and atypical. In one house are three children, 8, 6 and 1½ years of age. The oldest child has very mild scarlet fever. The older children were exposed at the same time to the same infection. The parents consent to giving the baby the contents of Lilly's "Prophylactic Package" of antitoxin. Should the 6 year old be given a similar prophylactic dose or the larger treatment dose?

A child of 9 years received three vaccination treatments in February. Ten days ago he developed mild scarlet fever. The mother of this child herself had one "vaccination" treatment (injection) as soon as the boy became ill. One week later she asked for her second shot. The vials containing the usual second and third doses were accidentally crushed; so about half of a prophylactic package syringe was given. That night her arm became very painful and a large red area about 3 by 4 cm. developed at the site of this injection. Presumably this is an irritating and considerably larger dose than the usual second injection. In consideration of this, will it be safe to give her a third dose in two weeks or less after the second injection? Please omit name and address.

M.D., South Dakota.

Answer.—It is not always possible to differentiate German measles from scarlet fever by the appearance of the rash or other symptoms. In scarlatinal rashes, the intradermal injection of from 0.1 to 0.2 cc. of scarlet fever antitoxin usually results in a local blanching. Scarlet fever antitoxin does not blanch the rash of German measles.

It is not possible to say from the symptoms described in the letter whether the first case was one of German measles or scarlet fever. It may be pointed out, however, that second attacks of scarlet fever, while uncommon, may occur.

The passive immunization from the administration of antitoxin cannot be expected to last more than two weeks. Prophylactic injection of antitoxin is an emergency measure to prevent the development of scarlet fever in susceptible persons already perhaps infected. Various manufacturers have placed on the market prophylactic doses of scarlet fever antitoxin that differ considerably in antitoxin content. In some instances the amount of antitoxin has been too small to afford protection. Firms licensed by the Scarlet Fever Committee are required to put out a prophylactic dose of scarlet fever antitoxin which is at least one-half the therapeutic dose.

Without information as to the dosage of toxin used in immunizing the 9 year old boy, it is not possible to say what result might be expected. The following dosage is recommended: First, 500 skin test doses. Second, 1,500 skin test doses. Third, 5,000 skin test doses. Fourth, 15,000 skin test doses. Fifth, from 25,000 to 30,000 skin test doses.

Following these five doses, given at intervals of one week, a skin test should be made, and if it is not entirely negative, the last dose is repeated until the skin test is negative.

It may be that the three doses did not contain enough toxin to immunize the child, and that the present illness is scarlet fever.

In the case of the mother who received one "vaccination" treatment and not the others because of the broken vials, there seems to have been a confusion between the toxin employed in graduated doses for the more permanent active immunization, and the prophylactic dose of antitoxin, which is usually distributed in syringes and used for temporary passive immunization. The mother probably received one dose of toxin, and then one half of a prophylactic dose of antitoxin. Neither would be sufficient to protect her from scarlet fever. No mention is made of a skin test on the mother. A negative skin test would indicate that she did not require immunization.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, July 6. Sec., Dr. W. O. Sweek, 404 Heard Bldg., Phoenix.

California: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Delaware: Wilmington, Regular Board and Homeo. Board, June 15-17. Pres., Dr. H. W. Briggs, Wilmington.

Florida: St. Petersburg, June 14-15. Sec., Dr. H. M. Rowlett, Box 603, Tampa.

Hawaii: Honolulu, July 12-15. Sec., Dr. A. L. Davis, 1254 Emma Street, Honolulu.

Indiana: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.

Kansas: Kansas City, June 15. Sec., Dr. Albert S. Ross, Sabetha.

Kentucky: Louisville, June 24-26. Sec., Dr. A. T. McCormack, 532 West Main Street, Louisville.

Maine: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: Baltimore, Reg. Bd., June 15-18. Sec., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 15-16. Sec., Dr Joseph S. Garrison, Old Orchard Rd., Ten Hills, Baltimore.

Massachusetts: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

Minnesota: Minneapolis, June 15. Sec., Dr. A. E. Comstock, 734 Lowry Bldg., St. Paul.

Mississippi: Jackson, June 24-25. Sec., Dr. F. J. Underwood, Jackson.

Missouri: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.

National Board of Medical Examiners: Part I, June 21-23; Part II, June 22-23. All applications should be made on or before May 15. Sec, Dr. J. S. Rodman, 1600 Walnut Street, Philadelphia.

New Jersey: Trenton, June 15-16. Sec., Dr. Alexander MacAlister, Room 1101, Trenton Trust Bldg., Trenton.

New York: Albany, *Buffalo*, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, State Education Bldg., Albany.

North Carolina: Raleigh, June 21-25. Sec., Dr. K. P. B. Bonner, Morehead City.

North Dakota: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.

Oregon: Portland, July 6 8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 13-17. Director Prof. Education, C. D. Koch, Harrisburg.

Rhode Island: Providence, July 1-2. Sec., Dr. B. U. Richards. 315 State House, Providence.

South Carolina: Columbia, June 22. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

South Dakota: Custer, July 20. Director, Med. Lic., Dr. H. R. Kenaston, Bonesteel.

Texas: Austin, June 15-17. Sec., Dr. T. J. Crowe, 918 Mercantile Bank Bldg., Dallas.

Utah: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg, Salt Lake City.

Vermont: Burlington, June 23. Sec., Dr. W. Scott Nay, Underhill.

Virginia: Richmond, June 16-19. Sec., Dr. J. M. Preston, 720 Shenandoah Life Bldg., Roanoke.

Washington: Olympia, July 6. Director, Dept. of Licenses, Mr. Charles R. Maybury, Olympia.

West Virginia: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, Basic Science Board, June 12-13. Sec., Dr. M. F. Guyer. Regular Board, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

Connecticut March Examination

Dr. Robert L. Rowley, secretary of the Connecticut Medical Examining Board, reports the written examination held at Hartford, March 9-10, 1926. The examination covered 7 subjects and included 70 questions. An average of 75 per cent was required to pass. Of the 15 candidates examined, 12 passed and 3 failed. The following colleges were represented:

College	Year Grad.	Per Cent
PASSED		
Yale University School of Medicine	(1924)	83.8,
	(1925)	77.2, 81.2, 82.7, 86.3
Georgetown University School of Medicine	(1925)	83.3, 87
Boston University School of Medicine	(1925)	78.7

Tufts College Medic[illegible] S[illegible]	([illegible])	76.5
Queen's University [illegible]		79.2, 80.8
University of Montr[illegible]		75

College FAILED	Year Grad.	Per Cent
Jefferson Medical College of Philadelphia	(1912)	36.2
Meharry Medical College	(1923)	62.1
University of Naples, Italy	(1919)*	58.5

Dr. Rowley also reports that 14 candidates were licensed by endorsement of their credentials at the special meeting held at Hartford, March 26, 1926. The following colleges were represented:

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
Yale University School of Medicine	(1921), (1924)	N. B. M. Ex.
Rush Medical College	(1925)	Illinois
Johns Hopkins University Medical Department	(1923)	Maryland
Harvard [illegible]	[illegible]	Michigan
Tufts Col[illegible]		Mass.
Universit[illegible]		Michigan
Albany M[illegible]		New York
Columbia [illegible] geons	[illegible]	New York
Cornell University Medical College	(1923)	New York
University of Pennsylvania School of Medicine	(1913)	Penna.
University of Vermont College of Medicine	(1887)	Vermont

* Verification of graduation in process.

Missouri March Examination

Dr. James Stewart, secretary of the Missouri Board of Health, reports the written examination held at Jefferson City, March 9-11, 1926. The examination covered 15 subjects and included 128 questions. An average of 70 per cent was required to pass. Of the 22 candidates examined, 20 passed and 2 failed. The following colleges were represented:

College PASSED	Year Grad.	Number Passed
Northwestern University Medical School	(1923)	2
State University of Iowa College of Med.	(1907) 1, (1925)	1
University of Kansas School of Medicine	(1918)	1
Harvard University	(1922) 1, (1923)	1
University of Minnesota Medical School	(1925)	1
St. Louis University School of Medicine	(1925) 2, (1926)	4
Washington University School of Medicine	(1925) 1, (1926)	1
Eclectic Medical College, Cincinnati	(1923)	1
University of Pennsylvania School of Medicine	(1922)	1
Meharry Medical College	(1909)	1
University of Szegedin, Hungary	(1914)*	1

College FAILED	Grad. Year	Failed Number
John A. Creighton Medical College	(1916)	1
University of Naples, Italy	(1922)*	1

* Verification of graduation in process.

Book Notices

Intestinal Tuberculosis. Its Importance, Diagnosis and Treatment: A Study of the Secondary Ulcerative Type. By Lawrason Brown, M.D., Chairman of the Medical Board of the Trudeau Sanatorium, Saranac Lake, New York, and Homer L. Sampson, Roentgenographer of the Trudeau Sanatorium, Saranac Lake, New York. Cloth. Price, $4. Pp. 304, with 112 illustrations. Philadelphia: Lea & Febiger, 1926.

This is a thorough discussion of the subject; more than that, it carries a significant message, based on the authors' rich experience. Intestinal tuberculosis is not a terminal and hopeless complication of pulmonary tuberculosis, yielding to no therapeutic efforts, as generally represented in textbooks; if diagnosed early, it is as amenable to treatment as an incipient or moderately advanced pulmonary tuberculosis. An extensive statistical presentation of symptoms and signs renews forcibly the impression of the protean character of the disease and of the impossibility of a correct diagnosis. But the authors make the assertion, well substantiated by their statistics, that a correct observation of certain filling-defects after a radiopaque meal or enema and definite alterations in the motility of the intestines make it possible to diagnose ulcerations correctly in approximately 100 per cent. In the chapter on pathologic anatomy (which is all too brief) it is pointed out that Gardner found much tendency to spontaneous healing, rendered futile, as a rule, by the simultaneous spread of the disease. But in patients who had been treated a considerable length of time, complete healing had occurred with epithelial regeneration. The treatment consists of heliotherapy or, in Saranac Lake preferably, irradiation with the mercury vapor quartz lamp. Since heavy dosage of rays is given over the entire surface of the body, it is surprising that no mention is made of the effect on the pulmonary process. The experience has been made frequently, here and in Europe, that certain pulmonary processes react so severely to ray treatment as to make thorough heliotherapy of a concomitant extrapulmonary focus impossible. Of a group of seventy-four patients treated with the lamp, 31 per cent were cured (no roentgenologic signs of the disease could be detected any more) and 65 per cent were considerably benefited. These figures alone show that every one who treats tuberculous patients should study seriously the authors' methods of diagnosis and treatment.

Lehrbuch der speziellen Pathologie und Therapie der inneren Krankheiten. Fur Studierende und Aerzte. Von Professor Dr. Med. Adolf Strümpell, Direktor der medizinischen Klinik der Universität Leipzig. Von Professor Dr. Med. et Phil. Carly Seyfarth, Assistent an der medizinischen Klinik der Universitat Leipzig. Twenty-fifth edition. Paper. First Volume. Pp. 872, with 147 illustrations. Second Volume. Pp. 985, with 200 illustrations. Leipsic: F. C. W. Vogel, 1926.

Shortly before his death, Strümpell wrote in his autobiography: "December 24, 1881, in the afternoon, I sat down at my writing-table and proudly traced these words in large letters on the uppermost sheet of a thick mass of paper, 'First Chapter. Typhoid Fever.' That the book thus begun should have such unusual success and that I forty-two years later, in my seventy-first year, should be working on the twenty-fifth edition, I then could neither foresee nor assume." Of this book, 95,000 copies in German have been sold, and it has appeared in English, French, Russian, Spanish, Italian, Greek, Turkish and Japanese translations, in some cases in several editions. A translation by Herman F. Vickery and Philip Comps Knapp of Boston from the second and third German editions was published by Appleton & Co. in 1892, and the fourth edition, based on the seventeenth German, appeared in 1911. Strümpell's textbook is undoubtedly the most widely used book in its field of modern times. While translated into more languages than any other similar book, Osler's Practice appears to have exceeded it in the numbers sold of the original editions. In a presentation copy of his sixth edition in 1905 Osler writes, "This is number 62 of the first 105,000 copies printed." Professor Seyfarth began to collaborate with Strümpell in the revision for the twenty-second edition. Strümpell himself worked on the present edition since 1923, giving particular attention to his favorite section, nervous diseases, and that section now appears as he left it. The other parts of the book have been revised by Seyfarth. Thorough and dependable, clear and concise, Strümpell's book is noted especially for its masterly presentation of nervous diseases. Students and practitioners alike from the first have found it a reliable guide in the study of internal diseases, and the twenty-fifth revision fully merits the same confidence and use as its predecessors.

Chemical Pathology. Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago and in Rush Medical College, Chicago. Fifth edition. Cloth. Price, $8.50. Pp. 790. Philadelphia: W. B. Saunders Company, 1925.

Eighteen years ago, the first edition of this book was written. The present edition appears five years after its immediate predecessor. From its first edition the aim of the work has been to gather from the fields of pathology, chemistry, physics, general medicine and allied sciences such material as would contribute to a consideration of pathology from the chemical point of view. The result has been recognized among authorities as unique, scholarly, logical and usable. Its place cannot be taken by any other book, either as a source of references to relevant periodical material or as a valuable body of subject matter in itself. In the preface to the present edition, the author points out that the preparation of a briefer or of an exhaustive work would have been comparatively easy. To select, however, that which is valuable and stimulating, even though it may not have become completely established, is obviously a more difficult task. In order to adhere to a policy of compression without undue exclusion, the book has been almost entirely rewritten and new material included. At the same time, preliminary discussion of principles now generally known has been omitted. The book continues, admirably, to fill its place among standard, authoritative works.

Allen's Commercial Organic Analysis. A treatise on the properties, modes of assaying, and proximate analytical examination of the various organic chemicals and products employed in the arts, manufactures, medicine, etc., with concise methods for the detection and estimation of their impurities, adulterations, and products of decomposition. Volume IV, special characters of essential oils; resins, india-rubber, gutta percha, balata, and allied substances; the constituents of essential oils, and allied substances; the general characters and analysis of essential oils. Edited by Samuel S. Sadtler, S.B., Member American Institute of Chemical Engineers, Elbert C. Lathrop, A.B., Ph.D., Member American Institute of Chemical Engineers, and C. Ainsworth Mitchell, M.A., F.I.C., Editor of "The Analyst." Fifth edition. Cloth. Price, $7.50. Pp. 648. Philadelphia: P. Blakiston's Son & Co., 1925.

The new volume of this work is divided into five chapters: one a short treatise on resins; the second on india rubber, gutta percha, balata and allied substances; the other three on the essential oils. In the last three chapters are considered (1) various individual oils, with brief statements concerning the source, chemical content, physical properties, impurities and possible adulterants; (2) some of the constituents from a distinctly chemical point of view, and (3) the analytic methods applicable to the essential oils, written in epitomized form. The reediting has been quite complete: in fact, the volume has been almost entirely rewritten, some of the old work having been deleted and new work inserted. Much of the information is of little value to those not actively engaged in the manufacture or analysis of cosmetics, essential oil preparations or pharmaceutic products, and the book, therefore, will be of chief interest only to those engaged in such manufacture or analysis. For these the volume is a valuable reference work because (1) it contains a vast amount of carefully compiled material, and (2) the abundance of references to the original literature supplements the sometimes abbreviated discussions.

Your Hair and Your Health. By Oscar L. Levin, M.D., Chief of Clinic, Cornell University Medical College and Clinic. Cloth. Price, $1.50. Pp. 163, with 10 illustrations. New York: Greenberg, 1926.

This is a popular book on the hair and things that pertain thereto. It is written in sprightly style and holds well the reader's attention. As a matter of fact, the style is perhaps too sprightly. It leads the writer into a way of making positive statements that are at best opinions—certainly not facts. The thesis of the book is that "healthy hair needs a healthy constitution" (p. 13). That is a hard thesis to maintain in the face of the battalions of bald-headed men who are certainly as healthy as the rest of us and, we are inclined to believe, a little tougher. "Hairs do grow thicker and stiffer from shaving, however, and so does the hair of women who have undergone bobbing. When so-called [why so-called?] superfluous hair is temporarily removed by shaving, pulling or mechanical depilatories, the succeeding hairs are also thicker and stiffer" (p. 14). That is all opinion which is in conflict with some very careful studies. Who is in position to say now that the hair of women grows thicker from bobbing? It has not had any appreciable effect in that direction on the men who have been bobbing their hair for geological ages compared with the time women have been doing it. "At the bottom of many cases of temporary or permanent baldness . . . are emotional disturbances, such as worry, fright, shock and nervous exhaustion. . . . Dissipation, indirectly, can cause baldness and there may be a grain of keen observation in the tradition about the bald-headed front row of tired business men" (p. 23). Who knows the facts on which such positive statements are made? And what of this pathology? "Emotional disturbances affect the nerves. When the nerves are injured or diseased, the blood supply is deranged. The hair suffers. . . . When these disturbances are long continued, the blood supply is disturbed more permanently and the hair suffers with the rest of the system" (p. 23). The difficulty is that in his general statements about the pathology of baldness, the author apparently makes no distinction between the baldness symptomatic of various diseases and following acute diseases and common baldness—premature senile baldness; so that he makes statements that the lay reader thinks refer to the kind of baldness he knows and is interested in, while as a matter of fact the author's statements, if they apply at all, apply only to special and unusual kinds of baldness and cannot be justified as statements about common baldness at all. If one turns a little farther and gets away from the pathology of baldness, one finds statements like this: "When water is mixed with soap it sets free the alkali, which attacks and saponifies the grease upon which it is rubbed; hence the strength of a soap is determined by the amount of its alkaline contents" (p. 48). The explanation of the action of soaps is nothing of the sort. Water does not decompose soap and set free the alkali. Probably the sole thing that makes soap detergent is the fact that a solution of soap in water is an emulsifying agent; it emulsifies grease and dirt and in that way rids the skin of them. The same thing can be done to a limited extent with an emulsion of tragacanth. If it were free alkali that made soaps useful, the simpler plan would be to wash in a solution of potassium hydroxide and be done with it. These are almost random quotations. Probably two or three times as many inaccurate statements could be picked out in the same pages. Such inaccuracies are of more than academic interest. Lay readers will accept the book as authoritative and follow its teachings—and be none the better for it. The public wants—and perhaps needs—correct information on the subject; but it has already an oversupply of misinformation. This work cannot be called a serious effort to cover the subject or one that represents the actual state of our knowledge—or our ignorance.

Thérapeutique chirurgicale. Par P. Lecène, Professeur à la Faculté de médecine de Paris, et R. Leriche, Professeur à la Faculté de médecine de Strasbourg. Tome III. Abdomen et organes génito-urinaires. Par P. Lecène. Cloth. Price, 50 francs. Pp. 645. Paris: Masson & Cie, 1926.

The author takes up in detail the pathologic types of malformation, injury or disease in each region and organ of the abdomen. He describes briefly the characteristic anatomic, pathologic and clinical features, and then discusses in great detail the indications and contraindications for surgical treatment and the methods available, with their reported final results. Recommendations for surgical treatment are based largely on the experience of the author, but he reviews some of the literature on each subject and gives the references. He considers the surgical affections of the abdominal wall, the peritoneum, the stomach, the duodenum, the intestines, the liver, the bile ducts, the pancreas, the spleen, and the genito-urinary tract of the male and the female. The details of surgical technic are not considered, but the surgical methods are discussed. The absence of illustrations is not a serious defect, since the volume is not meant to replace, but to supplement, works on operative surgery, pathology and anatomy. The book is valuable because it reflects the experience and judgment of the author, giving, along with his opinions, the present generally accepted treatment of abdominal disorders.

A Text-Book of Pharmaceutical Chemistry. By Arthur Owen Bentley, Ph.C., Director of the Department of Pharmacy, University College, Nottingham, and John Edmund Driver, M.Sc., A.I.C., Lecturer in Chemistry, University College, Nottingham. Cloth. Price, $6. Pp. 456. New York: Oxford University Press, 1925.

This book is primarily written for those studying for the Pharmaceutical Society's diploma and degrees in pharmacy, and contains the pharmaceutic and organic chemistry—both theoretical and practical—necessary for the chemist and druggist qualifying examination. The book is divided into two parts, inorganic and organic. The former includes a description of the nonmetallic substances of the British Pharmacopeia, with tests for impurities and detailed methods of analysis described in the British Pharmacopeia. Part II comprises the organic, describing methods of detection, ultimate analysis of the elements and a concise general survey of the subject, including a description of the organic substances of the British Pharmacopeia. The appendix contains useful schemes for the identification of the more common inorganic and organic compounds. Provided the text is used as the authors intend, that is, only by those who have completed a course in systematic chemistry, it may serve a useful purpose, although it is of little value to those studying pharmacy in the United States, as it does not include the U. S. Pharmacopeia X.

EVOLUTION, GENETICS AND EUGENICS. By Horatio Hackett Newman, Professor of Zoology in the University of Chicago. Cloth. Price, $3.50. Pp. 639, with 99 illustrations. Chicago: University of Chicago Press, 1925.

The first edition of this book appeared in 1921. So great was its success that it passed through six printings and demanded a second edition, which is represented by the present volume. It is actually an encyclopedia on the present status of our knowledge of evolution culled from many sources. It includes even a brief chapter on the Scopes trial and the present questioning of our knowledge and beliefs in this field. For the student of biology or the general reader it is perhaps the most valuable volume on the subject. A glossary and a good bibliography supplement the text.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

THE CLINICAL INTERPRETATION OF THE WASSERMANN REACTION. By Dr. Robert A. Kilduffe, A.B., A.M., M.D., Director Laboratories, Atlantic City Hospital. Cloth. Price, $2.50. Pp. 203, with charts. Philadelphia: Lea & Febiger, 1926.

Monograph with survey of literature and details of technic.

CONTRIBUTIONS TO OPHTHALMIC SCIENCE. Dedicated to Dr. Edward Jackson in Honor of his Seventieth Birthday, March 30, 1926. By his Pupils and Colleagues in the United States. Cloth. Pp. 319, with illustrations. Menasha, Wisconsin: George Banta Publishing Company, 1926.

Festschrift for an American pioneer in opthalmology.

SIR WILLIAM OSLER. Memorial Number. Appreciations and Reminiscences. Bulletin No. IX of the International Association of Medical Museums and Journal of Technical Methods. Cloth. Privately issued. Pp. 632, with illustrations. Montreal, 1926.

Collection of many personal and historical Osleriana.

DISEASES OF THE SKIN. By Richard L. Sutton, M.D., LL.D., F.R.S., Professor of Diseases of the Skin, University of Kansas School of Medicine. Sixth edition. Cloth. Price, $12. Pp. 1303, with 1158 illustrations. St. Louis: The C. V. Mosby Company, 1926.

Up-to-date edition of well established textbook.

DIATHERMY: With Special Reference to Pneumonia. By Dr. Harry E. Stewart, Director, New Haven School of Physiotherapy. Second edition. Cloth. Price, $3. Pp. 228, with 45 illustrations. New York: Paul B. Hoeber, Inc., 1926.

Enthusiastic monograph on this method.

PLANNING A TUBERCULOSIS SANATORIUM. By T. B. Kidner. Technical Series No. 6. Paper. Pp. 36, with illustrations. New York: National Tuberculosis Association, 1926.

Authoritative practical pamphlet prepared under auspices of national association.

THE TECHNIC OF ORAL RADIOGRAPHY. By Clarence O. Simpson, M.D., D.D.S., F.A.C.D. Cloth. Price, $5. Pp. 207, with 165 illustrations. St. Louis: The C. V. Mosby Company, 1926.

All the details for securing good roentgenograms of the teeth.

BERNHARD HEINE'S VERSUCHE ÜBER KNOCHENREGENERATION. Sein Leben und seine Zeit. Von der deutschen Gesellschaft für Chirurgie, anlässlich ihrer 50. Tagung den Fachgenossen unterbreitet. Herausgegeben von der anatomischen Anstalt 'der Universitat Wurzburg. Mit einem Vorwort von Professor Dr. A. Bier. Paper. Price, 7,50 marks. Pp. 224, with 106 illustrations. Berlin: Julius Springer, 1926.

DIE CHIRURGIE: Eine zusammenfassende Darstellung der allegemeinen und der speziellen Chirurgie. Herausgegeben von Prof. Dr. M. Kirschner und Prof. Dr. O. Nordmann. Lieferung 8. IV. Band. Die Chirurgie des Ohres. Von Prof. Dr. A. Blohmke. Paper. Price, 16 marks. Pp. 359-636, with 182 illustrations. Berlin: Urban & Schwarzenberg, 1926.

OVER AETIOLOGIE, DIAGNOSTIEK EN THERAPIE VAN CHRONISCH RHEUMATISCHE AANDOENINGEN. Door J. van Breemen, Geneesheer-Directeur van het Instituut voor physische Therapie te Amsterdam. Paper. Pp. 246. Rotterdam: W. L. & J. Brusse, 1926.

Medicolegal

Treatment of Fracture—Failure to Use Roentgen Rays

(Wright v. Conway (Wyo.), 241 Pac. R. 369)

The Supreme Court of Wyoming, in affirming a judgment on a verdict directed for the defendant physician, says that he was employed to treat a fracture of the femur of the plaintiff's right leg, the fracture being a simple and transverse one at or a little above the junction of the lower and middle third of the femur. The method of treatment adopted was that of Buck's extension. The court finds negligence on the part of a physician sometimes defined, generally, as consisting in his doing something that he should not have done, or in omitting to do something that he should have done. The negligence must appear from expert testimony, and that it caused the condition complained of, unless relating to a matter of common knowledge. Neither failure to possess or use ordinary skill, nor that the result complained of was brought about thereby, should be supported merely by theory, conjecture or inference, but should be based on tangible, substantial evidence which the court and jury may grasp and understand.

That the defendant ascertained and diagnosed correctly the nature of the injury was beyond controversy; all the evidence showed it. There was an attempt to show that the extension may have been improperly applied on the theory that the defendant erred as to the location of the fracture; but the evidence fell far short of that, and the court cannot well understand how he could have correctly ascertained the nature without at the same time discovering the location of the fracture. Having correctly ascertained the location and nature of the fracture, a roentgenogram for that purpose was unnecessary. Failure to secure a union during the period of the defendant's treatment (which was less than five weeks), or even longer, had it been continued, would not, alone, establish negligence, or even be a ground for an inference thereof, since a successful result is not guaranteed, and the general rule is that an unsuccessful result does not, alone, establish negligence or justify an inference thereof.

Unless negligence consisted in the failure to use the roentgen ray within a few days after the initial treatment and occasionally thereafter during the first four weeks, and especially on the appearance of a knot underneath the leg, which, according to one physician's testimony, may have indicated malapposition of the bones, there was no evidence of negligence in the defendant's diagnosis and treatment. But it was not alleged, nor did it appear in the evidence, that a roentgen-ray machine was available at any time prior to the use of one when the leg was found to be swollen, about four weeks after the application of the extension. The expert witness apparently assumed that one was available at all times mentioned in his testimony, or else intended to say that it should be used whether available or not. But the law does not exact the impossible of the medical practitioner. In the court's investigation it found no case wherein the failure to use the roentgen ray was held to be negligence, where it did not directly appear that such an instrument was available, or there was no suggestion to the contrary. Negligence being charged in the defendant's failure to bring to his aid this comparatively new apparatus, which the court does not understand is yet recognized as a necessary or usual part of the equipment of a general medical practitioner's office, at least in the ordinary community, the court thinks it was the plaintiff's duty, under the rule of the burden of proof in malpractice cases, to show by his evidence that such a machine or apparatus was available for the defendant's use, or might at least have been easily procured. That ought not to have been difficult if such an instrument was available. Certainly, if one was at the hospital, that might easily have been shown, or if in the office of any other practitioner in the city. Moreover, failure to use roentgen rays, even though available, was not necessarily negligence.

Negligence was alleged in burning the flesh by the careless application of hot irons or bottles; but it did not appear that the defendant did anything more than to suggest or prescribe the hot applications. It was not shown that he applied them, or that he was present when they were applied. If applied by a nurse at the hospital, there was nothing to show that her relation to the defendant was such as to make him responsible for that action. She might have been employed by the plaintiff. Without further showing than that found in this case, the defendant would not be liable for the burns or blisters resulting from such hot applications.

Testes Are "Members"—on Presumption of Sanity

(People v Saylor et al (Ill), 149 N. E. R. 767)

The Supreme Court of Illinois holds that castration is within the terms of the Illinois statute which is directed against the removal or disabling of any limb or member of any person with the malicious intent to maim or disfigure him There can be no question that the testes are members of a man, and that their removal maims and disfigures him. Mayhem by castration seems always to have been a felony at common law.

An instruction which began by telling the jury that every person accused of crime is presumed to be sane until the contrary is shown was erroneous The law does not presume every person accused of crime to be sane until the contrary is shown. The only effect of the presumption of sanity is to require the introduction of evidence tending to prove insanity. When that is done, the presumption no longer prevails. It does not continue until the contrary is shown. The question of sanity or insanity is then to be determined from the whole evidence, without any reference to the presumption. The rule, as stated in the instruction, in effect imposed the burden of proof on the defendant It is not essential that insanity should be shown. All that is required of the defendant is evidence sufficient to raise a reasonable doubt of sanity The presumption of sanity cannot be considered by the jury in determining whether the defendant is sane or insane. Whenever evidence is introduced tending to show that the accused was insane at the time of committing the act charged as a crime, the burden devolves on the state to prove beyond a reasonable doubt, regardless of the presumption, that at the time of the commission of the act the accused was sane.

Validity of Law Relative to Drugless Healers

(People v Lewis (Mich), 206 N. W R. 553)

The Supreme Court of Michigan, in affirming a judgment of conviction of the defendant of the crime of practicing medicine without a certificate of registration or license, says that he was a graduate of a school of chiropractic and contended that the medical practice act, requiring registration and fixing qualifications of all persons practicing medicine is unconstitutional, unreasonable, arbitrary, and violates the fourteenth amendment to the federal constitution It was insisted that the statute operates to prohibit chiropractors from obtaining a license, because it requires them to pass an examination before a medical board in subjects which no school of chiropractic teaches, and which are not used by them in the practice of their profession The court takes it that the defendant desires to practice a system of treatment of human ailments or diseases without the use of drugs If so, is it unreasonable to require him to pass an examination before a board of qualified experts in the subjects of anatomy, histology, embryology, physiology, chemistry, bacteriology, pathology, diagnosis, hygiene and public health?

It is within legislative power to require persons practicing treatment of human ailments or diseases without the use of drugs to possess knowledge of organic structure, intimate structure of tissues, embryonic evolution, functions of the body, molecular and atomic structure of bodies, microorganisms, science of diseases, morbid processes observable in various diseases of organs, recognition of disease by its symptoms, science of health, and efforts made and measures and precautions deemed advisable for the promotion and protection of public health This power has been exercised, and the regulation provided must stand, unless violative of rights guaranteed by the state or the federal constitution. The court finds no limitation on the subject in the state constitution, and it can conceive of no deprivation of the equal protection of the law in requiring drugless healers to understand the subjects mentioned. The fact that the defendant had not received instruction in some of these subjects offered no objection to the validity of the law. This court declines to indict the medical profession of design to annihilate the system of chiropractic adjustment and the legislature of supinely surrendering the lawmaking power in aid thereof. It may be that no chiropractic school teaches all the subjects mentioned, and chiropractors feel that a knowledge thereof is unnecessary and unused in their school of practice, but this affords no reason for requiring the legislature, in recognition thereof, to enact no law not in conformity therewith.

While the court thinks that all questions presented fall within the opinions of this court in *Locke* v. *Circuit Judge*, 184 Mich 535, 151 N. W. 623, and *People* v. *Rose*, 218 Mich. 642, 188 N. W. 417, it has examined the points anew, and finds the great weight of authority against every contention advanced. The cases cited by the defendant were clearly distinguishable from, or so contrary to, the former decisions of this court and the overwhelming weight of authority as to render review thereof unnecessary.

No school may fix a standard of education, and thereby entitle its graduates to practice any branch of the healing arts, regardless of legislation, and no graduate can of right demand that legislation accord with what he has been taught The law recognizes chiropractic adjustments or treatments, and fixes the standard of knowledge deemed essential to a proper practice thereof The legislature took a comprehensive view of the public welfare in regulating the practice of medicine What this court has said is not in disparagement of drugless healing The court decides only the legal questions presented, and leaves the policy of the law, within legitimate limits, to the legislative power.

Testimony Not Deemed Expert—Characteristics of Age

(In re Cooper's Estate (Iowa), 206 N. W. R. 95)

The Supreme Court of Iowa, in holding that a motion to direct a verdict for the proponents of the will contested in this case was rightfully sustained, says that a physician testified that at one time he was called to attend the testator for some physical ailment Aside from that he never made any examination of him, nor any observation to determine his mental condition He saw him and observed him as he saw and observed other people, on the street or in his business, but he did not claim that he gave any special attention to the testator as to his mental condition He described largely his physical condition He was also asked whether in his opinion the testator was of sound or unsound mind The testimony of this physician was offered in the case, and it appeared that he would have answered, if permitted, that the testator, during his later years, became childish and appeared to be senile, that the witness thought there was mental decay. As to the condition of the testator's mind, the physician said, "I wouldn't consider it sound." Under this record, the supreme court does not feel that the testimony of the physician rose to the dignity of expert testimony.

There was no showing that the testator was afflicted with the diseases incident to advancing years, excepting that the physician said that he saw evidences of senility. There was no contention that the testator's talk was irrational or that his thoughts were disconnected. He was probably peevish, childish, and made himself obnoxious by continually repeating the stories of his early life. But all these matters go with advancing years, and are not unexpected when it is considered that this man was 76 years of age when he made the first will, and 82 when the codicil was made. There was nothing in the record to show that he was so lacking in mental capacity as to be unable intelligently to remember and identify the property he possessed and the natural objects of his bounty, and intelligently to dispose of it. This is the ultimate measure of the mental capacity that the law requires of a testator Will contests must turn largely on the facts incident to each case, and it is difficult to lay down a rule in such matters.

Society Proceedings

COMING MEETINGS

American Ophthalmological Society, Hot Springs, Va., June 14-16. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.
Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.
Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
New Jersey, Medical Society of, Atlantic City, June 17-19. Dr. J. B. Morrison, 97 Halsey Street, Newark, Secretary.
North Carolina, Medical Society of the State of, Wrightsville Beach, June 15-17. Dr. L. B. McBrayer, Southern Pines, Secretary.
Oklahoma State Medical Association, Oklahoma City, June 22-24. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-First Annual Meeting, held at Atlantic City, N. J., May 4-5, 1926

(Continued from page 1794)

Experimental Production of Meningocerebral Tolerance in Acute and Subacute Lead Poisoning

Dr. C. V. Weller, Washington, D. C.: There is a general feeling that there is no such thing as an acquired immunity to lead poisoning, but there is evidence among the older writers that those exposed to lead, who develop convulsions early, do not develop poisoning later, when given the same exposure, although there may be exacerbations of poisoning with other minerals. In uranium nephritis, the body seems also to gain a certain tolerance to heavy mineral poisoning. We have chosen the guinea-pig as an experimental animal, as it shows clearly the convulsive manifestations indicating cerebral injury. The dosage is given by mouth in capsules, and the size of the dose makes no difference if it is given regularly. The nervous system reactions are shown by tonic and clonic contractions. Necropsy shows congestion and edema of the cortical cells. When the animals are given a rest from the poison and then exposed again later, we find that their resistance is increased to a marked degree to a much larger dosage. We have also noted this type of resistance in individuals who have been exposed to metallic poisoning.

DISCUSSION

Dr. W. E. Dixon, Oxford, England: Dr. Weller has shown conclusively that there is a tolerance to lead poisoning produced under these conditions. If the tolerance is of the nature that he assumes it to be, it is obviously of great importance; but is he sure that the tolerance is not due to the fact that the lead was not absorbed?

Dr. W. F. Hamilton, Montreal: Did Dr. Weller note any difference in the reactions in the different sexes, in connection with industrial lead poisoning cases?

Dr. C. V. Weller, Washington, D. C.: I have no evidence on the excreta or the tissues of killed animals. I think the lack of absorption is part of the mechanism. That would give an explanation as to the nature of the immunity; that is, the formation of some mechanism by which absorption does not occur. It is difficult to say why that should persist for one year. Another series of animals showed that in the beginning the reactions were the same. I think there must be vascular changes in the gastro-intestinal tract which would interfere with absorption. I have saved the lives of a number of animals by applying artificial respiration when convulsions occurred, because the clonic convulsions lead to asphyxia. The convulsions are so severe that the animals injure themselves. In the guinea-pig there are no true palsies, although there is incoordination following the convulsions. I have not noted any difference in the sex incidence.

Effect of Intravenous Administration of Quinidine and Other Drugs on the Mechanism of the Heart Beat

Dr. Frank N. Wilson, Ann Arbor, Mich.: I do not advocate the indiscriminate use of intravenous medication in heart disease. I believe that drugs can be given by mouth with less expense and trouble and with less danger. Nevertheless, intravenous medication has its advantages. I have given such drugs as quinidine, digitalis, pilocarpine and atropine intravenously. Quinidine has been given intravenously with very few reactions; sometimes there is slight blurring, confusion, a feeling of warmth, slight headache and nausea, but rarely vomiting. One patient died after a second dose. His was a case of advanced myocardial disease. Digitalis and ouabain differ from other drugs in that they penetrate the cells, but effect was obtained five minutes after injection. In paroxysmal tachycardia, digitalis given intravenously acts in a striking manner in lowering the ventricular rhythm and stopping the attack. With quinidine, if there is no reaction within seven minutes, there will be no reaction at all. Five out of thirty patients were benefited by quinidine intravenously.

DISCUSSION

Dr. G. C. Robinson, Nashville, Tenn.: I was interested that the intravenous injection of ouabain continued to be effective, but the maximal effect was not for several hours. The effect of large doses of digitalis by mouth is about the same as with ouabain intravenously. The intravenous injection of digitalis continues to be effective and is a gradual process.

Dr. Levin, Baltimore: Dr. Wilson's observations emphasize a point in regard to quantities, as to the margin of safety between a toxic and a therapeutic dose. This is small when the drug is given intravenously and is in the active circulation. Even when the drug is given by mouth, there is some evidence of poisoning in some patients. With more careful selection of cases we have limited the number of persons who receive this drug, and the percentage of successes is higher. With regard to the transition from fibrillation to normal rhythm, we found that in one instance, when the drug was given by mouth, the rhythm went back to normal with prompt resumption of auricular activity. I should like to ask whether in cases successfully treated by the intravenous method Dr. Wilson had tried giving the drug by mouth first in order to compare results with the slower medication.

Dr. Frank N. Wilson, Ann Arbor, Mich.: In regard to Dr. Levin's question, we do not give any patients quinidine by mouth or subcutaneously. We give the drug intravenously. The intravenous dose is really no more than half the dose by mouth. I do not know whether it is safe to go higher with intravenous dosage, although we had only one bad result, in a patient with advanced subacute bacterial endocarditis.

Observations on Patients with Pernicious Anemia, Partaking of a Special Diet

CLINICAL ASPECTS

Drs. George R. Minot and William P. Murphy, Boston: The dietetic treatment of pernicious anemia may be of more importance than has been generally recognized. Forty-five patients with pernicious anemia have continued to take a diet for from six weeks to two years, composed especially of foods rich in complete proteins and iron—particularly liver (from 120 to 240 Gm. a day). The diet also contains for each day at least 120 Gm. of muscle meat and an abundance of fresh vegetables and fruits, a normal amount of starch foods, and is relatively low in fat. Following the diet, all the patients showed a prompt, rapid and distinct remission of their anemia, coincident with at least rather marked symptomatic improvement, except for disorders due to spinal cord degeneration. Improvement was often striking, so that when the red blood cell count averaged for all, before starting the diet, 1,470,000 per cubic millimeter, one month afterward it averaged 3,400,000; and for the twenty-seven cases observed from four to six months after the diet was begun, the average count was 4,500,000. Patients having had two or more relapses showed on the average slightly lower red blood corpuscle counts about one and two months after commencing the diet than did those who had started it in their first or second relapse. Data are not yet available to indicate whether the remissions will last any longer than in other cases, because most of the patients have taken the diet for less than seven months. All the patients have remained to date in a good state of health except three, who discontinued their diet. Two of these rapidly improved on resuming it, while the other has only just begun to take the liver again.

PHYSIOLOGIC ASPECTS

DRS. REGINALD FITZ, WILLIAM P. MURPHY and ROBERT D. MONROE, Boston: Special studies concerning changes that have occurred in the blood following the beginning of the dietary regimen have been carried out in eleven of the forty-five cases. Within a few days after starting the diet, there occurred in the eleven cases and also in five others a temporary greater output of young red blood cells from the marrow, lasting about ten days, as indicated by an increase of the reticulocytes in the peripheral blood from usually less than about 1 per cent to an average of about 8 per cent. The peak of their rise occurred in from four to ten days. This early manifestation of improvement in blood formation was accompanied by a decrease of the bile pigments in the blood serum. The icterus index began to drop quite promptly after the diet was begun, generally reaching normal or below in from two to three weeks. The corpuscular protein content increased in a fashion closely parallel to the increasing hemoglobin concentration, while the plasma protein nitrogen readings remained nearly constant. The nonprotein nitrogen of the blood was not affected during the patients' improvement. As in other pernicious anemia cases regenerating blood, coincident with the rise in hemoglobin percentage and red blood cell count, there occurred a steady rise in the corpuscular volume. This was demonstrated by measurements of the blood and plasma volume by the congo red method, which showed that although the total volume increased but slightly, the volume of corpuscles often was trebled in a period of a few weeks, from which it may be interpreted that a marked growth of blood tissue was observed.

DISCUSSION

DR. W. S. THAYER, Baltimore: How long were these cases observed on an average, and how long was the longest case observed without remission?

DR. A. S. WARTHIN, Ann Arbor, Mich.: In 1895 a woman suffering from pernicious anemia was being treated by leading clinicians. She died thirty years afterward. For many years she lived on one apple a day and two or three bowls of weak coffee. At 76 she became senile and developed a huge appetite for meat. The picture of pernicious anemia disappeared, and she lived to the age of 86. Another woman who had pernicious anemia for twenty years ate nothing but lettuce. She had cord symptoms. She made a great change in diet and the pernicious anemia disappeared, but the cord symptoms remained and she was killed by a dose of arsphenamine. I believe there is a distinct relation between pernicious anemia and faulty diet.

DR. F. M. ALLEN, Morristown, N. J.: I have had patients with pernicious anemia who showed marked edema. They were put on a salt free diet, which improved the blood picture and the clinical symptoms. In general, improvement has been the same as in Dr. Minot's series. We considered that pernicious anemia was a metabolic disease due to infection of the blood forming organs, and we removed all foci of infection to give the blood forming organs a chance. We refrained from arsphenamine and from transfusion. I am favorably impressed by Dr. Whipple's work, but I am not sure as to the results of liver. It does not cure pernicious anemia. The blood picture can be recognized even when the blood count is improved. The nerve lesions are the hardest to clear up. In our experience, patients have died while taking liver. We have had patients give almost uniform results. The suspicion occurs to me that we are all alike in refraining from injuring the patient and if they can be spared from what physicians do to them they do better. It is not wise to force the patient to maintain too high a blood count. Transfusions may be used in acute emergencies and we may use arsenic, but not as a routine.

DR. W. M. BOOTHBY, Rochester, Minn.: Was the liver well cooked, moderately cooked, or raw?

DR. REGINALD FITZ, Boston: At the Massachusetts General Hospital we have seen very surprising changes in the blood count, but in one patient who would not eat the liver, there was no improvement.

DR. J. S. MEANS, Boston: There were an unusual number of remissions, much higher than before the diet. Patients did not do so well if they discontinued the diet.

DR. HERMAN O. MOSENTHAL, New York: The problem is this: There is something which destroys the red blood cells and it is our function to allow the body to regenerate the red blood cells faster than the toxic material can destory them. We should especially allow protein to build up the red blood cells; therefore, high feeding is effective. These patients are benefited by a high caloric diet. We have been able to control the number of red blood corpuscles. The nitrogen assimilation in pernicious anemia is different from normal, but feeding of protein will cause assimilation of nitrogen in these cases. In starvation after the war, and in diabetes, high protein feeding causes assimilation of nitrogen and improvement of the condition. Whether liver is the best high protein substance must be determined.

DR. GEORGE R. MINOT, Boston: Two of the patients had the diet two years, and twelve had the diet for over one year, the others less than eight months. In regard to diet playing a rôle: Patients often have been living on an ill balanced diet. In regard to the blood picture always remaining, as Dr. Allen said, I feel that this is always true. I know of two cases in which this is so. Dr. Boothby asked whether the meat was raw. It was well cooked. In regard to Dr. Mosenthal's remark, the changed metabolism is probably related to the amino-acids.

Effect of Ultraviolet Rays on Oxygen Consumption and Total Metabolism

DRS. EDWARD H. MASON, *Montreal, and* HOWARD H. MASON, New York: We used a quartz mercury vapor lamp without filter; it is not a pure ultraviolet ray. The cases were divided into two groups: first, those with a marked degree of pigmentation; second, those with an increased amount of circulating bilirubin, and therefore not any marked pigmentation. Group 1 showed marked reduction of heat production, pulse rate and metabolic rate. Group 2 showed increase in circulating bilirubin, as in catarrhal jaundice or pernicious anemia. This reaction may be the response of melanin in the skin.

DISCUSSION

DR. ALFRED F. HESS, New York: I should like to ask Dr. Mason whether he tried any effect with visible light because the source he used contained both visible rays and ultraviolet rays. Recent reports have shown increased metabolism; that is not in accord with a disease such as rickets, in which metabolism is slow and where ultraviolet rays are a specific. I have used melanin in suspension. If we added cholesterol and then melanin, the action of the rays could not be intensified, nor could it be done by adding tryptophane. We do not yet understand the relation of melanin to bile pigmentation. Dr. Mason says that he changed the wave lines. In what direction does he change them by a fluorescent substance? I do not think that melanin would change it in the same direction.

DR. GEORGE H. WHIPPLE, Rochester, N. Y.: In regard to the fluorescence of bilirubin, such material as we have studied does not fluoresce. I should like to know on what data Dr. Mason made that statement.

DR. E. H. MASON, Montreal: We have only used the total rays obtained from the mercury quartz vapor lamp. There were no pure filtered rays, and only the visible rays coming from the mercury quartz lamp were used. Clinical observations showed that ultraviolet rays tend to increase metabolism, but I think this is merely a clinical impression. As regards fluorescent substances, my opinion about the change of wave lengths along the path of a fluorescent substance was obtained from Professor Lloyd at McGill. I understood that there is a shift of the wave in the path of the light. He tells me that bilirubin is fluorescent and that the shift of the wave is appreciable. Probably it is shift of the heat wave.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

Archives of Internal Medicine, Chicago

37: 453-595 (April) 1926

*Mechanism of Cancer Metastasis. M. T. Burrows, St. Louis.—p. 453.
*Chronic and Acute Arteritis of Pulmonary Artery and of Patent Ductus Arteriosus. K. Schlaepfer, Milwaukee.—p. 473.
*Relationship Between Acromegaly and Diabetes. H. J. John, Cleveland.—p. 489.
Mechanism of Insulin Action. E. F. Mueller, H. J. Wiener and R. v. E. Wiener, New York.—p. 512.
Gastric and Duodenal Ulcer. A. Winkelstein, New York.—p. 541.
*Therapeutic Use of Diets Low in Water and in Mineral Content. N. M. Keith, F. H. Smith and M. Whelan, Rochester, Minn.—p. 550.
Water Metabolism. H. E. Andrews, Chicago.—p. 559.
**Effect of Digitalis on Ventricular Premature Contractions.* H. L. Otto and H. Gold, New York.—p. 562.
Pressure on Central Nervous System in Relation to Hyperglycemia: Chronic Piqûre. W. Z. Tychowski and C. Crowell, Philadelphia.—p. 567.

Mechanism of Cancer Metastasis.—Observations are reported on by Burrows from which it is evident that metastases in cancer are not the result of a simple migration of cancer cells from the cancer to distant organs. Metastases are primarily the result of the spread of a liquid substance from the main tumor mass. This substance spreads over surfaces. It is liberated through a digestion of cells in the center of the mass of cancerous tissue. This digestion is not an autolysis resulting from the absence of oxygen, but the result of an excess of the growth stimulating substance, a product of the cell's oxidation. This fluid is rich in growth stimulating substance. It stimulates not only the cancer cells to grow but also the normal cells. The cancer cells already adapted to it respond more quickly. In their growth, they then remove the nutrition and necessary substances from the other cells and destroy them. As to the cause of cancer, these observations suggest that cancer is not the result of any specific substances or group of substances. It is the result of some primary change either in the cell or the tissue which may be induced by any one of a number of widely different substances and conditions.

Arteritis of Pulmonary Artery.—Chronic and acute arteritis of the pulmonary artery and of the patent ductus arteriosus has been observed in nineteen cases. To two of these cases in which no additional valvular lesions were found, a third is added by Schlaepfer. In all nineteen cases, the picture was that of a subacute bacterial endocarditis, with the signs of a patent ductus arteriosus. The seat of the arteritis is undetermined. The anterior wall of the pulmonary artery and the pulmonary orifice of the duct are the places of predilection.

Relationship Between Acromegaly and Diabetes.—Two cases are reported by John in each of which diabetes developed years after the acromegaly was recognized. They illustrate the fact that diabetes associated with acromegaly does not differ materially from diabetes without acromegaly; that the same treatment is applicable to the former as to the latter types of cases of diabetes; that in each, the same results may be expected under proper treatment, and that in each case, if the patient is untreated or is improperly treated, the same increased loss of carbohydrate tolerance, acidosis and coma ensues.

Use of Diets Low in Water and Mineral Content.—Keith and his associates have found carefully controlled diets of low mineral and water content both practicable and effective in the treatment of cases of edema and ascites. The diets may be varied in protein and caloric value, with little increase in mineral or water content. There have been no demonstrable ill effects from the continued use of these diets.

Effect of Digitalis on Ventricular Premature Contractions.—In a case reported by Otto and Gold, digitalis in full doses; given at once, completely abolished spontaneously occurring premature ventricular contractions. Three grains (0.19 Gm.) daily of the powdered leaf, for four days, failed to abolish them. They disappeared after a full dose in the time necessary for practically complete absorption of the drug. The same results were obtained on repetition. After the first full digitalization, seven days were allowed without digitalis for elimination of the drug; the premature contractions began to reappear on the third day. However, when a daily maintenance dose of 3 grains of the leaf was started immediately after the second full digitalization, the premature contractions did not reappear. The persistence of the effect after withdrawal of the digitalis was considerably longer following prolonged digitalization than after a single full dose.

Atlantic Medical Journal, Harrisburg, Pa.

29: 427-506 (April) 1926

*Glandular Treatment of Pituitary Tumors and Hyperplasias. W. Timme, New York.—p. 427.
*Results in Roentgen-Ray Treatment of Early Pituitary Lesions. F. C. Grant, Philadelphia.—p. 430.
*Surgical Management of Pituitary Lesions. C. H. Frazier, Philadelphia.—p. 435.
General Tendencies in Modern Treatment. B. A. Cohoe, Pittsburgh.—p. 439.
Ephedrine and Other Drugs of China. C. F. Schmidt, Philadelphia.—p. 441.
*Treatment of Purpura Hemorrhagica. T. Fitz-Hugh, Jr., Philadelphia.—p. 443.
*Treatment of Secondary Anemia. T. T. Sheppard, Pittsburgh.—p. 444.
Physical Factors of Psychoneurosis. D. J. McCarthy, Philadelphia.—p. 446.
Impetigo Contagiosa. H. G. Wertheimer, Pittsburgh.—p. 451.
Pemphigus Neonatorum Contagiosus. C. Foulkrod, Philadelphia.—p. 454.
Acute Mastoiditis with Complications. J. F. Culp, Harrisburg.—p. 457.
Osteitis Deformans Involving Cranial Bones with Changes in Auditory Apparatus. H. M. Becker, Sunbury.—p. 458.
Lingual Quinsy. G. B. Jobson, Franklin.—p. 459.
Foreign Body (Polyp) in Nasal Chamber. F. E. Magee, Oil City.—p. 460.
Removal of Watermelon Seed from Right Bronchus of Child. C. E. Hays, Johnstown.—p. 461.
Complete Unilateral Congenital Bony Atresia of Postnasal Space. P. H. Decker, Williamsport.—p. 461.
Immature Cataract in Myope: Extraction with Loop and Corneal Suture. S. Lewis Ziegler, Philadelphia.—p. 462.
Systemic Infection Following Expression of Tonsils. F. B. Harding, Allentown.—p. 463.
Sarcoma of Antrum. A. S. Kaufman, Philadelphia.—p. 463.
Why Chronic Gonorrhea in Male? P. S. Pelouze, Philadelphia.—p. 464.

Glandular Treatment of Pituitary Hyperplasias.—The therapy applicable to pituitary hyperplasia, Timme says, is specific; namely, the administration of whole gland pituitary substance in very small doses, from ⅒ to ¼ grain (0.006 to 0.016 Gm.) once or twice daily, at least two hours after meals. Every fourth or fifth day the administration should be omitted. If too much extract is given, the headaches are made worse, or may even be brought on thereby. Should they be accompanied by mild hyperthyroid states, with low grade excitement and irritability, it is an excellent plan to give, in addition to the pituitary extract, hypodermic injections of sodium cacodylate, from ¾ to 1½ grains (0.04 to 1 Gm.), every alternate day for fifteen or twenty injections. An important point in the treatment is to discontinue the pituitary extract as soon as the premonitory signs of a headache make their appearance, and not begin again until the headache has disappeared. Of the various exciting causes, those which are remedial should be remedied—such as going without food too long, or indulging in too much carbohydrate food. By these simple means, many so-called chronic migrainous attacks of pituitary origin may be reduced to two or three yearly.

Roentgen-Ray Therapy of Pituitary Lesions.—Seven cases of pituitary lesions are presented by Grant as examples of the type of case in which roentgen-ray treatment proved effective in reducing the size of the tumor or checking its growth. Headache was not a prominent symptom in this series. In many of the patients, the condition appeared after the onset of the climacteric, so that it could not be determined whether or not this therapy might have resulted in a return of the menstrual cycle. In every case, the visual fields were enlarged, and the visual acuity increased. As was to be expected, there was no regression in the bony changes about the sella.

Surgical Management of Pituitary Lesions.—Frazier has made it a practice to resort to radiotherapy in all his cases after operation for its prophylactic effect, but without substantial evidence of any beneficial influence, except perhaps that since this practice has been introduced, no patient has returned to the clinic with signs of recurrence.

Treatment of Purpura Hemorrhagica.—The following procedures are recommended by Fitz-Hugh, and in the following chronological sequence for any given case of purpura hemorrhagica: (1) blood transfusions, to be repeated according to indications and effects; (2) massive irradiation of the spleen (this should be repeated unless leukopenia develops, which is a danger signal), and (3), as a somewhat heroic though decidedly promising procedure, splenectomy should be performed.

Treatment of Secondary Anemia.—Sheppard says that the administration of small doses (from 5 to 10 cc.) of whole blood, given intramuscularly every day or every other day, seems to be of decided benefit when other methods have failed. The use of transfusions is of questionable value, except in those cases in which the blood stream has been more or less rapidly depleted by hemorrhage.

Boston Medical and Surgical Journal

194: 613-660 (April 8) 1926

*Origin and Spread of Sacro-Iliac Idea and Its Menace. C. F. Painter, Boston.—p. 613.
*Roentgenograms of Chest in Tuberculosis Suspects. R. T. Monroe and E. S. Emery, Jr., Boston.—p. 619.
*Reexpansion of Lung in Empyema: Mechanical Effects of Carbon Dioxide Inhalation. E. D. Churchill, Boston.—p. 623.
Modern Medical Tendencies. J. A. Rockwell, Boston.—p. 625.
Public Health and Federal Government. J. A. Tobey, Washington, D. C.—p. 629.
Persistently Patent Urachus: Case. W. Van Hook, Chicago.—p. 631.
Case of Erythema Arthriticum Epidemicum. K. Dodd, Boston.—p. 633.

Sacro-Iliac Disease.—Painter asserts that there is an overwhelming body of evidence to the effect that sciatica is a cardinal symptom of sacro-iliac lesions and that it is a perineuritis brought about by the proximity of the radicals making up the main trunk of the sciatic to whatever lesion is affecting the joint. Furthermore, the evidence, which is accumulating and which was, as a matter of fact, among the earliest pieces of evidence in support of the idea that there was a sacro-iliac joint, should tend to give pause in advocating operative measures, other than manipulative, in the treatment of traumatic sacro-iliac lesions.

Roentgenography of Chest.—A series of patients was studied by Monroe and Emery, Jr., to determine the best criteria for requesting roentgen-ray examinations of the chest in cases in which the physical findings or symptoms suggest pulmonary tuberculosis. The results tend to show that films should be taken whenever the symptoms suggest the presence of tuberculosis, and that the physical findings are less reliable guides.

Carbon Dioxide Inhalation in Empyema.—The usual methods employed to promote reexpansion of the lung are discussed by Churchill, and the use of carbon dioxide inhalation for its mechanical effects on the lung and thorax is described. As far as is known, there are no deleterious effects to be expected; in fact, the dizziness and other unpleasant subjective symptoms which are apt to attend too vigorous employment of other respiratory gymnastics do not occur with the use of carbon dioxide. Churchill uses the carbon dioxide inhaler as employed by Henderson in the detherization of postoperative cases. The tank is left at the bedside of the patient after he has been instructed in its use, and the duration and frequency of the exercise are varied to suit the needs of the individual case. The average ambulatory convalescent patient inhales the gas for five minute periods fifteen or twenty times a day.

California and Western Medicine, San Francisco

24: 433-576 (April) 1926

*Unique and Promising Experiment in Medical Education. W. J. Kerr, San Francisco.—p. 465.
*Surgical Judgment. F. R. Fairchild, Woodland.—p. 471.
*Carcinoma of Kidney. C. F. Rusche, Hollywood.—p. 474.
Eimeria Butkai, N. Sp.; New Coccidian from Man. D. Causey, Princeton, N. J.—p. 477.
Abuse of "Reciprocity." L. E. Mahoney, Santa Monica.—p. 478.
Mesenteric Chylous Cyst. C. G. Levison and M. Wolfsohn, San Francisco.—p. 480.
Edema Following Use of Insulin. D. M. Ervin, San Francisco.—p. 482.
*Laboratory Aids in Diagnosis and Control of Eclampsia. H. A. Stephenson, San Francisco.—p. 484.
*Intestinal Obstruction. E. Butler and G. D. Delprat, San Francisco and Berkeley.—p. 488.
Progress of Treatment for Hypertrophic Stenosis of Pylorus. B. Chaffee, Long Beach.—p. 492.
Radiation Treatment of Superficial Malignancies. A. Soiland and W. E. Costolow, Los Angeles.—p. 494.
*Mongolian Idiocy: Two Cases. H. Dietrich and H. K. Berkley, Los Angeles.—p. 498.
Urethral Caruncle. P. A. Ferrier, Pasadena.—p. 500.

Experiment in Medical Education.—The University of California Medical School has had the cooperation of some of the prominent alumni in the preparation of students for practice. These alumni have, severally, spent a week at the school carrying on, by seminar, lecture and personal contact, instruction in the art and practice of medicine. The experiment has proved of great value to students, interns and faculty alike, and the alumni have expressed themselves as well repaid for the time spent at the school. This year (1925) a further experiment was tried by Kerr during the second half, or the elective period, of the fourth year. Three selected students were apprenticed to alumni in general practice in communities of varying size and assigned for a month each. Another student spent a month in a group clinic in a small town in which there is close cooperation on all cases. Reports from these students give some idea of the value of such contacts for the undergraduate. The students and alumni have expressed themselves favorably on this method of instruction.

Surgical Judgment.—Fairchild asserts that every individual by law made eligible to operate should by law be required to keep records of his cases. These records he should be compelled to submit, on request, to the inspection of some competent constituted authority for review. This would work no hardship and could entail no embarrassment on the competent surgeon. It would strengthen and protect him. It is obvious what the effect on the incompetent and dishonest would be. His exposure would be inevitable and his ultimate downfall a certainty. The profession and the public have a right to know the truth. The factor of individual responsibility properly applied would be conclusive.

Carcinoma of Kidney.—Rusche says that, contrary to the formerly accepted opinion, carcinoma of the kidney is rare before the fifth decade. The mistaking of mixed tumors for carcinomas is responsible for the large number of these growths formerly reported as occurring in extreme youth. Carcinoma develops from the tubular epithelium, or occasionally from the epithelium of the pelvis. In some cases the urinary canals may, to a certain extent, persist, and if dilated, may form large spaces. The much discussed intracellular formations of cancer cells are well seen in these growths. Clinically, the neoplasm may be hard or soft, more often soft; it may become colloid and may form a fungoid vascular mass. It has been found associated with testicular carcinoma and (in the aged) with calculus. In a few cases, the growth has broken through the skin. Metastasis occurs most frequently to the retroperitoneal lymph glands, the lung and the liver. The tendency to produce hematuria is due to the infiltration of the tumors. The earlier metastases occur through the lymphatics; later, when the veins have been invaded, carcinomatous thrombi may be carried by these vessels.

Liver Function Tests in Eclampsia.—In Stephenson's opinion, there is no liver function test now available that is devoid of danger, easy of application, and at the same time reliable. Kidney function tests are better adapted for use in these toxemias. The readings, however, are not constant, and the demonstration of lowered function is more apt to come in cases in which some damage has been done to the vascular system in the kidney or in patients with preexisting nephritis. After the acute toxemia has subsided, they give much valuable information as to the function of the organ, particularly with reference to permanent injury. This information is of great importance in the prognosis for future pregnancies. Examination of the eye grounds should be made in all cases of acute toxemia. Blood chemical findings may be omitted with the possible exception of the blood urea. Blood pressure readings are important. A gradually increasing pressure, particularly diastolic, usually means an increasing toxemia.

Intestinal Obstruction.—Ninety-three cases of intestinal obstruction in which operation was performed with a mortality of 34.4 per cent were reviewed by Butler and Delprat. There were thirty-four inguinal hernias with obstruction; four umbilical hernias; four ventral postoperative hernias, and nine femoral hernias. All contained portions of the ileum. There were seventeen obstructions due to abdominal adhesions. Ten of this group were due to postoperative adhesions; one was caused by adhesions to the tip of Meckel's diverticulum; two were due to adhesions resulting from acute inflammation of the pelvic organs, and two were due to adhesions about the terminal ileum and cecum. Three obstructions were due to volvulus; one involved the small bowel, and two involved the sigmoid. Carcinoma accounted for eleven—two of the pylorus, one of the jejunum, three of the cecum, two of the descending colon, two of the sigmoid, and one of the rectum. Six enterostomies alone were performed in this group; one patient recovered. Resection of the cecum, followed by immediate anastomosis, was done on two patients; one recovered. Two patients had resections of the pylorus, followed by anastomosis; one recovered. On one patient, gastro-enterostomy for carcinoma of the small bowel was followed by death. In six obstructions, the cause could not be determined, because when the patients came into the hospital they were moribund, and enterostomy alone was performed.

Mongolian Idiocy.—Dietrich and Berkley report two cases, each occurring in one of separate sets of twins. The twin in each case was normal.

Johns Hopkins Hospital Bulletin, Baltimore

38: 255-325 (April) 1926

Defensive Mechanism of Parametrium During Pregnancy and Labor. J. Hofbauer, Baltimore.—p. 255.
*Symptoms of Coronary Occlusion. L. Hamman, Baltimore.—p. 273.
*Arteriosclerosis of Cerebral Vessels; Pathogenesis of Hypertension. J. Bordley, III, and B. M. Baker, Jr., Baltimore.—p. 320.

Symptoms of Coronary Occlusion.—The symptoms of coronary occlusion described by Hamman are the symptoms that develop when a relatively large branch of the coronary arteries is obstructed, and the obstruction is followed by the development of an infarct. The symptoms are grouped as: (1) the immediate symptoms associated with the occlusion, the anginal seizure; (2) the symptoms associated with the myocardial damage, myocardial insufficiency; (3) the symptoms associated with the myocardial infarct, and (4) additional symptoms. It is emphasized that the diagnosis of coronary occlusion has something more than academic interest, since prompt recognition of the accident may promote recovery. Rest is a potent therapeutic measure; strain has a damaging effect. In coronary occlusion, the immediate outcome of the accident may depend on getting the patient promptly at rest, and the degree to which the heart will finally regain its functional capacity may depend on the length of time rest is enforced. Therefore, in some instances the fate of the patient may depend on the recognition of the accident. After the immediate danger is over and alarming symptoms have passed, prolonged rest insures the best possible functional restitution. Every week through which rest can be prolonged will improve the final functional result. To relieve the symptoms of the attack, morphine should be given in large doses. At the same time the patient should be promptly and fully digitalized. If digitalis has not been given previously, the appropriate dose of an efficient preparation should be calculated and administered according to Eggleston's method.

Arteriosclerosis of Cerebral Vessels and Hypertension.—Bordley and Baker are convinced that there is at least an association between persistent hypertension and arteriosclerosis of the vessels supplying the brain stem. As it has long been recognized that arterial hypertension is accompanied by arteriosclerosis in at least some portion of the body, they suggest that a localization of this process in the medulla oblongata may be the essential factor in the production of the persistent high blood pressure, although these changes may be secondary to the hypertension.

Journal of Biological Chemistry, Baltimore

67: 547-804 (March) 1926

Wyss Chemical Method of Assaying Insulin. F. Bischoff, L. C. Maxwell and N. R. Blatherwick, Santa Barbara, Calif.—p. 547.
Influence of Asphyxiation on Blood Constituents of Marine Fishes. F. G. Hall, I. E. Gray and S. Lepkovsky, Madison, Wis.—p. 549.
Comparative Metabolism of Certain Aromatic Acids: Fate of Some Halogen Derivatives of Benzoic Acid in Animal Body. N. J. Novello, S. R. Miriam and C. P. Sherwin, New York.—p. 555.
Lipase Studies: Hydrolysis of Esters of Dicarboxylic Acids by Lipase of Liver. D. A. McGinty and H. B. Lewis, Ann Arbor, Mich.—p. 567.
Study of Molybdic Oxide Colorimetric Method for Estimation of Phosphorus Compounds of Blood. J. H. Roe, O. J. Irish and J. I. Boyd, Washington, D. C.—p. 579.
*Colorimetric Method for Estimation of Blood Calcium. J. H. Roe and B. S. Kahn, Washington, D. C.—p. 585.
*Concentrated Antineuritic Vitamin Prepared from Brewers' Yeast. A. Seidell, Washington, D. C.—p. 593.
Distribution of Some of More Important Amino-Acids in Globulin of Thyroid. H. C. Eckstein, Ann Arbor, Mich.—p. 601.
Crystalline Kombé Strophanthin. W. A. Jacobs and A. Hoffmann, New York.—p. 609.
*Determination of Urea in Folin-Wu Blood Filtrates by Autoclave Method. E. P. Clark and J. B. Collip, Edmonton, Alta.—p. 621.
*Blood Sugar Studies. M. Gilbert, H. Schneider and J. C. Bock, Milwaukee.—p. 629.
Influence of Hydrogen Ion Concentration and of Temperature on Hydrolytic Scission of Casein. D. C. Carpenter, New York.—p. 647.
Bromolecithins of Liver and Egg Yolk. P. A. Levene and I. P. Rolf, New York.—p. 659.
Phosphorus Content of Body in Relation to Age, Growth and Food. H. C. Sherman and E. J. Quinn, New York.—p. 667.
*Relation of Guanidine to Parathyroid Tetany. J. B. Collip and E. P. Clark, Edmonton, Alta.—p. 679.
Inorganic Composition of Blood. S. E. Kerr, Philadelphia.
  *I. Effect of Hemorrhage.—p. 689.
  II. Changes in Potassium Content of Erythrocytes Under Certain Experimental Conditions.—p. 721.
Clinical Calorimetry: Storage of Glycogen in Exophthalmic Goiter. H. B. Richardson, S. Z. Levine and E. F. Du Bois, New York.—p. 737.
Antiricketic Substances: Catalytic Formation of Antiricketic Cholesterol Derivative. C. E. Bills, Evansville, Ind.—p. 753.
Acetyl Monoses. I and II. P. A. Levene and H. Sobotka, New York.—pp. 759 and 771.

Estimation of Blood Calcium.—A colorimetric method for estimating blood calcium has been developed by Roe and Kahn which is based on the precipitation of calcium as phosphate, and the determination of the latter by the molybdic oxide colorimetric procedure. The method is said to be very accurate and is a successful micro procedure, being adaptable to much smaller quantities of serum than other methods in use at the present time.

Concentrated Antineuritic Vitamin Prepared from Brewers' Yeast.—A relatively simple method for preparing fairly large quantities of a highly active nonhygroscopic vitamin concentrate from brewers' yeast is described by Seidell. The several steps of the method are: removal of the yeast protein by boiling; absorbing the vitamin from the resulting solution by means of fullers' earth; extracting the activated solid with sodium hydroxide; acidifying and concentrating by vacuum distillation; removing the sodium as sodium sulphate and the nonactive organic material by means of methyl alcohol; finally, converting the active viscous residue to a nonhygroscopic dry powder by treatment with strong ethyl alcohol.

Determination of Urea by Autoclave Method.—A combination of the autoclave method of Folin and Wu for converting urea into ammonia, and the estimation of the ammonia thus formed by the technic of Pregl and the apparatus of Parnas and Wagner, are utilized by Clark and Collip in developing an accurate chemical system for the determination of urea in Folin-Wu blood filtrates. An electrically controlled modification of the Parnas-Wagner micro Kjeldahl apparatus is given.

Blood Sugar Studies.—Postprandial hyperglycemia was studied by Gilbert, Schneider and Bock on normal individuals. From fifteen to twenty-two blood samples were taken within a three hour period. The blood sugar time curves show wide fluctuations, and in many cases a secondary rise before a definite return to the fasting level.

Guanidine Theory of Parathyroid Tetany.—The urea and nonprotein nitrogen curves of untreated parathyroidectomized dogs have been determined by Collip and Clark. Similar curves have been obtained *following the injection* of certain guanidine compounds. The results obtained are opposed to the guanidine theory of parathyroid tetany.

Effect of Hemorrhage on Blood.—The effects of hemorrhage on the inorganic composition of serum and corpuscles have been studied by Kerr. A single hemorrhage, amounting to from one third to one half of the total blood volume results in a slight decrease in both sodium and chloride of serum, *and no significant change in corpuscles.* Repeated severe hemorrhage produces a greater fall of sodium and chloride of serum, and an increase in the inorganic phosphate. No *changes in the potassium, calcium or magnesium of serum* were observed. A large increase in the potassium concentration of the corpuscles occurred.

Journal of Laboratory and Clinical Medicine, St. Louis

11: 601-706 (April) 1926

*Bacteriology of Urine in Cooperation with Catheterization of Ureters. R. A. Keilty, Danville, Pa.—p. 601.
Studies in Embalming Fluids in Relation to Necropsies. J. A. Kolmer and F. Boerner, Philadelphia.—p. 608.
*Sedimentation Rate of Erythrocytes. H. N. Cooper, Watertown, N. Y. —p. 615.
Suggested Method to Be Followed in Developing Standard Course for *Medical Technicians.* W. E. King, *Detroit.—p. 623.*
Field Observations in Scarlet Fever. F. M. Huntoon, J. A. Murphy and S. H. Craig, Glenolden, Pa.—p. 630.
*Biochemic Affinity of Various Metals and Metalloids for Bacteria and Organic Tissues. J. F. Schamberg and H. Brown, *Philadelphia.*—p. 636.
University of Maryland Chronograph. O. G. Harne, Baltimore.—p. 641.
Physiologic Effects of Electro-Ionic Administration of Epinephrine. C. S. Smith and J. B. Brown, Columbus, Ohio.—p. 657.
Apparatus for Electro-Ionic Administration of Epinephrine. J. B. Brown and C. P. Effler, Columbus, Ohio.—p. 662.
Method for Study of Variations in Volume of Organs in Intact Animal. E. H. Hargis, Rochester, Minn.—p. 664.
*Comparative Study of Liver Functional Tests. A. I. Rubenstone and L. Tuft, Philadelphia.—p. 671.
Simple Combination *Distillation and Aeration Apparatus for* Micro-Estimation of Nitrogen. R. F. McCracken, E. Passamaneck and K. E. Harman, Richmond, Va.—p. 678.
Acetone Methylene Blue—Methylene Azur Eosin Solution for Staining Blood Smears. F. Proescher and A. S. Arkush, Agnew, Calif.—p. 682.
*Simplified Medium for Cultivation of Endameba Dysenteriae. C. A. Kofoid and E. H. Wagener, Berkeley, Calif.—p. 683.

Laboratory Study of Urine.—The report is made by Keilty of the laboratory studies of urine from 162 patients examined by cystoscopy and ureteral catheterization. While he does not advocate the routine use of the cystoscope and ureteral catheter as one might a vaginal examination or the proctoscope, Keilty is sure that its more frequent use when the urine is studied bacterially would clear up an otherwise obscure diagnosis; it would eliminate the kidney or bladder as offenders, or would accurately clinch a diagnosis strongly suggested clinically.

Sedimentation of Erythrocytes. — Cooper asserts that increased rate in sedimentation of the erythrocytes occurs in diseases attended by tissue degeneration and destruction. Principally this included: (1) acute inflammations; (2) pregnancy, (3) tuberculosis, and (4) malignancy. The curve during the first hour, and the final cell volume, offer prognostic value. The cause of the increased rate is associated with a hypercholesterolemia as well as an increase in globulin and fibrinogen in the blood.

Biochemical Affinity of Metals.—Schamberg and Brown have not been able to demonstrate, *in vitro,* any specific affinity of metallic and metalloid elements for organic tissues or for germs. Although no selectivity could be demonstrated, elements known to be therapeutically active (excepting arsenic) are absorbed by tissues to a marked degree.

Liver Function Tests.—By means of a combination of tests Rubenstone and Tuft were able to carry out the icterus index, blood chemical findings, levulose tolerance and dye tests at one time, and thus gain information concerning the bile pigment excreting functions of the liver and also its carbohydrate and protein metabolic functions. The patient is prepared as for a levulose tolerance; on the same tray the calculated amount of dye contained in a syringe is also prepared. Blood is then withdrawn into two tubes, one citrated or oxalated, and one a plain tube. Enough blood is withdrawn to suffice for all these tests. Through the same needle the calculated amount of dye is injected. Immediately following this the patient is instructed to drink the levulose solution. Blood is then withdrawn from the vein of the opposite arm at thirty minutes, one hour, two hours and, if necessary, three hours after the injection, the blood being again drawn into plain and oxalated tubes as indicated. The blood is allowed to clot, is centrifugalized, and the serum is pipetted off. The serum collected before the injection is then used for the *icterus index determination and also as the standard for the* dye test. As a rule, from 2 to 3 cc. of serum is sufficient for this purpose. The oxalated blood collected before injection *is used for the urea nitrogen, nonprotein nitrogen,* and sugar determination. Blood sugar tests are made on all the bloods (oxalated) taken subsequent to injection, and the serums are used to determine the dye retention, as described in the Rosenthal method.

Culture Medium for Endameba Dysenteriae.—The most satisfactory medium for cultivating *Endameba dysenteriae* Kofoid and Wagener found to be the coagulated egg slant covered with 10 cc. Locke's solution, containing 0.5 per cent of defibrinated rabbit blood. This medium is less favorable to the bacteria, which are found with the ameba cultures and quickly lower the p_H, than either Boeck's *egg-Locke-serum* medium or his egg-Locke-albumin medium. It is also simple to prepare, as fresh sterile rabbit blood can be easily obtained. On this rabbit blood medium the endameba multiply rapidly and are frequently found ingesting rabbit erythrocytes. It is necessary to transplant the cultures every forty-eight hours in order to keep them going continuously.

Maine Medical Association Journal, Portland

17: 63-82 (April) 1926

Maine's Team Work for Health. W. D. Thurber.—p. 63.
Diagnosis of Acute Appendicitis. P. E. Gilbert, Madison.—p. 70.

Medical Journal and Record, New York

123: 413-484 (April 7) 1926

Future of Biologic Investigation. H. B. Williams, New York.—p. 413.
Causal Parasites of Cancer. J. J. Clarke, London.—p. 415.
Plastic Surgery of Nose. A. G. Bettman, Portland, Ore.—p. 417.
Diagnosis of Engagement in Vertex Presentations. M. Rosensohn, New York.—p. 421.
Parenteral Ferments at Service of Immunity from Viewpoint of Evolution. F. Herb, Chicago.—p. 422.
Endemic Influenza. C. G. Field, Sierra Madre, Calif.—p. 425.
Renal Calculi. A. Strachstein, New York.—p. 426.
Control of Leukocytes. B. Ferguson, Birmingham, Ala.—p. 430.
Trichophytosis of Glabrous Skin. M. Scholtz, Los Angeles.—p. 432.
Coffee and Tea Drinking Among Children. R. R. Irvin, Pittsburgh.—p. 434.
Oral Method of Cholecystography with Tetraiodophenolphthalein. V. Knapp, New York.—p. 437.
Technic of Urography. S. R. Woodruff, Jersey City.—p. 440.
Adhesions of Large Intestine. D. Reid, Cambridge, England.—p. 441.
Intraperitoneal Adhesions. D. H. Bessesen, Minneapolis.—p. 443.
Popular Fallacies Concerning *Hemorrhoids.* J. F. Montague, New York. —p. 445.
Gallbladder Surgery. G. P. Muller, Philadelphia.—p. 446.
Gastrojejunostomy and Gastric Carcinoma. H. C. Reynolds and S. W. *Johnsen, Passaic,* N. J.—p. 451.
Acute Postoperative Dilatation of Stomach. A. J. Parker, Brooklyn.—p. 452.
Case of Intestinal Hemorrhage in Pneumococcal Infection. J. Chatard, Bordeaux, France.—p. 453.
Traumatic Rupture of Spleen. H. Koster, Brooklyn.—p. 455.
Ancient and Modern Medical Heresies. II. Chiropractic in Ancient Professions. J. Wright, Pleasantville, N. Y.—p. 457.
Medicine According to Talmud. S. R. Kagan, Springfield, Mass.—p. 459.
Historical Analysis of Laënnec's Scientific Work. C. G. Cumston, Geneva, Switzerland.—p. 461.

Southern Medical Journal, Birmingham

19: 241-324 (April) 1926

*Necropsy Findings in Diabetes. R. M. Wilder, Rochester, Minn.—p. 241.
Complications of Diabetes. W. S. Geddes, Birmingham.—p. 248.
*Elective Localization of Streptococci. R. L. Haden, Kansas City, Mo. —p. 253.
*Irritable Colon. M. L. Graves and G. Graves, *Houston, Texas.—p. 260.*
Psychoneurosis and Industrial Compensation. A. D. Young, Oklahoma City.—p. 266.
Influence of Posture on Development of Child. T. Toepel, Atlanta, Ga. *—p. 267.*
Prevention of Dengue. M. D. Levy, Houston, Texas.—p. 270.

*Health Education to Prevent Heart Disease. M. L. Townsend, Raleigh, N. C.—p. 271.
Cancer. C. W. Duval, New Orleans.—p. 276.
Id. M. T. Burrows, St. Louis.—p. 279.
Id. K. M. Lynch, Dallas, Texas.—p. 284.
Id. J. C. Bloodgood, Baltimore.—p. 287.
Id. J. S. Horsley, Richmond, Va.—p. 292.
*Chloride Treatment of Intestinal Obstruction. T. G. Orr and R. L. Haden, Kansas City, Mo.—p. 300.
*Hypertonic Sodium Chloride Solution Intravenously in Treatment of Extensive Superficial Burns. I. A. Bigger, University, Va.—p. 302.
Ureteral Calculi. E. G. Ballenger and O. F. Elder, Atlanta, Ga.—p. 306.
Polycystic Kidney: Four Cases. W. J. Wallace and B. A. Hayes, Oklahoma City.—p. 310.
Retinochoroiditis Juxtapapillaris. W. G. Harrison, Birmingham.—p. 314.
Endothelium of Larynx. C. McDougall, Atlanta, Ga.—p. 317.

Necropsy Findings in Diabetes.—An analysis is presented by Wilder of the pathologic conditions found in a group of eighty-one fatal cases of diabetes. Diabetes was solely and directly responsible for death in ten cases, death in the remainder being due to degenerative complications or to the consequences of operations. Necropsy was performed in fifty-eight cases. Gallstones were found in sixteen cases and pancreatic stones in three. Sclerosis of the kidneys occurred in fourteen instances, and chronic diffuse nephritis in four. Arteriosclerosis of considerable degree occurred in nearly all the cases, when the age of the patient exceeded 40. Gangrene accounted for fourteen of the eighty-one deaths and was associated with a high degree of coronary sclerosis and myocardial injury in 75 per cent of cases in which the heart was examined at necropsy. A very high incidence of advanced coronary sclerosis was encountered in the series as a whole (seventeen cases), associated, usually, with marked fibrosis of the myocardium. In four cases exophthalmic goiter and diabetes were combined. In two of these, the pancreas showed little or no anatomic abnormality. Hydropic degeneration was not recognized, but marked fatty changes in the islands occurred in eleven cases. In several cases, representing the most severe and intensive instances of diabetes in the series, the pancreatic lesions were trivial. On the other hand, severe pancreatic lesions were frequently found in cases of mild diabetes, in which death was due to degenerative complications. Wilder feels that the explanation of the cause of diabetes must involve considerations, such as heredity of predisposition and ability of cells other than those of the pancreas to elaborate insulin.

Elective Localization of Streptococci.—This experimental study by Haden shows that bacteria from chronic foci, if etiologically related to systemic disease, tend to reproduce in animals the lesion from which the patient suffers. Four groups of cases are reported in which a striking tendency to elective localization is demonstrated.

Irritable Colon.—M. L. and G. Graves assert that there is a large group of cases referred to in the literature as cases of chronic intestinal indigestion, dyspepsia, spastic constipation, hypo-acidity and neurasthenia, which it would be better to class as cases of irritable or disordered colon. These cases are more frequent among slender ptotic types of individuals. The pathologic change is intimately linked with the functional abnormality of the large intestine. The prognosis is good, except where there is an ulcerative process due to a chronic ulcerative colitis, to cancer, or tuberculosis or cases of dysentery, which often are very stubborn and difficult.

Prevention of Heart Disease.—The time to prevent or cure heart disease, Townsend says, is seventeen or more years before death from heart disease occurs. The means and the only means whereby the number of victims will be reduced is to pay conscientious attention to the little child with aching muscles who is accused of having "growing pains," the care of neglected and decayed teeth, the discovery and removal of all foci of infection whether of the tonsils, sinuses, intestines or what not, and repeated careful examinations of the heart, subsequent to attacks of any acute infectious fever, to discover what and how much that injured heart can stand. To accomplish this end, the full cooperation of the people must be secured and the degree of this cooperation will be determined by the degree to which they know the facts. Health education, in Townsend's opinion, is the remedy.

Sodium Chloride Treatment of Intestinal Obstruction.—Whatever the explanation of the chemical changes in the blood and urine may prove to be, Orr and Haden assert that the fact remains that there is a definite therapeutic benefit derived from the administration of sodium chloride in pyloric and intestinal obstructions, which tends to reduce the blood chemical determinations to normal and to prolong life.

Sodium Chloride Solution Intravenously in Extensive Burns.—In a case of very extensive superficial burns reported by Bigger, prompt and continued improvement followed the intravenous injection of 100 cc. of 20 per cent sodium chloride solution.

Texas State Journal of Medicine, Fort Worth

21: 691-758 (April) 1926

Health Relationship of White and Colored Races. O. Dowling, New Orleans.—p. 700.
Development of Public Interest in Malaria Control. J. A. Le Prince, Memphis, Tenn.—p. 703.
Use of Cross Cylinders in Refraction. V. R. Hurst, Longview.—p. 704.
Bronchopulmonary Spirochetosis: Three Cases. H. Freed, San Antonio. —p. 706.
Uncommon Cardiac Arrhythmias. W. E. Nesbit, San Antonio.—p. 710.
*Heart Pain. R. W. Baird, Dallas.—p. 714.
Diabetic Coma. S. H. Kahn, Dallas.—p. 717.
Management of Intra-Abdominal Infections. A. O. Singleton, Galveston. —p. 719.
*Surgical Treatment of Intracranial Hemorrhage in New-Born. W. O. Ott, Fort Worth.—p. 721.
*Ovarian Hemorrhages. F. C. Beall, Fort Worth.—p. 724.

Heart Pain.—Baird has analyzed 100 cases in which the chief complaint was pain around the heart. The pain was caused most often by heart failure or myocardial weakness (forty-two cases); cardiac neurosis and hypertension each caused pain in seventeen cases; angina pectoris in fifteen cases; chronic endocarditis in seven cases and aortitis in two cases.

Intracranial Hemorrhages in New-Born.—Of the six cases reported by Ott, four infants were subjected to subtemporal decompression, one recovered after repeated lumbar punctures, and one required a suboccipital exploration with the opening of the foramina of Majendie and Luschka. Three babies are apparently perfectly well 21, 19 and 1½ months, respectively, after the operation; one recovered following lumbar punctures, and two died, one eight hours after operation, apparently from massive hemorrhage, and the other after living three months and eleven days after operation, this death occurring from a recurrent obstruction of the foramina of Majendie and Luschka. Ott emphasizes the importance of careful observation of new-born babies for development of untoward symptoms, such as respiratory difficulty, blue spells, muscular twitchings and convulsions, and refusal to nurse. New-born babies having such symptoms should be given 10 cc. of the father's blood, subcutaneously, and a lumbar puncture done. If the cerebrospinal fluid is blood tinged, repeated punctures should be performed. If the symptoms do not clear up under this regimen, a decompression operation is indicated.

Ovarian Hemorrhages.—Beall has seen three cases of massive hemorrhage from the ovary; two of these simulated extra-uterine pregnancies; the third caused obstructive symptoms. He says that without a careful histologic study of the ovary, an erroneous diagnosis of ovarian pregnancy might be made.

U. S. Naval Medical Bulletin, Washington, D. C.

24: 175-460 (April) 1926

Medical Tactics in Naval Warfare. W. L. Mann.—p. 175.
Medical Needs of Republic of Haiti at Present Time. C. S. Butler.—p. 269.
*Mercurochrome-220 Soluble, Foreign Protein and Sugar in Gonorrheal Urethritis and Complications. J. E. Potter and F. H. Redewill.—p. 279.
Case of Total Heterotaxy. H. Phillips.—p. 299.
*Leukopenia in Disease. D. L. Beers.—p. 303.
Duodenal Ulcer: Twenty-Eight Cases. J. N. C. Gordon.—p. 307.
Extragenital Chancre: Case. R. F. Hague.—p. 313.
*Alveolar Abscess with Unusual Symptoms. E. D. Harrison.—p. 318.

Mercurochrome, Foreign Protein and Sugar in Gonorrheal Urethritis.—In 200 cases reported, as well as in animal experimentation, Potter and Redewill believe the results obtained prove that the milk injections intramuscularly activate intravenously injected mercurochrome-220 soluble. By the use of the diphenylcarbazide test for mercury in the seminal fluid and the mercurochrome kidney function test, it is possible, with the first intravenous mercurochrome injection, to detect patients that are not suitable for the continuous use of the drug By the Rackemann skin test, one can detect within fifteen minutes if a patient is sensitized to nonspecific foreign protein Milk and sugar, when injected alone, each have a diphasic action with a negative followed by a positive phase. Sugar added to milk alleviates shock, which may result if foreign protein is used alone. There are a number of disease conditions in which this treatment is contraindicated. If the cases are not properly selected in giving this combined injection, serious reactions may result In the animal experimentation, the combined use of mercurochrome, foreign protein and sugar cleared up staphylococcus infection more decidedly and in a shorter time than when either of the drugs was used alone Milk and sugar activate the mercurochrome, increase its bactericidal power, penetration, and permeability into the tissues, and stimulate a greater excretion of the dye from the glands, as is proved by the diphenylcarbazide and mercurochrome kidney function tests The most striking results are rapidity with which acute gonorrhea will respond to the combined mercurochrome-foreign protein-sugar treatment and the few complications that ensue.

Leukopenia.—Beers relates a case of Vincent's infection of the gums and tonsils in which the leukocyte count fell as low as 1,000 per cubic millimeter, polymorphonuclears, 12 per cent, lymphocytes, 68 per cent, and large mononuclears and transitionals, 20 per cent The symptoms complained of were cardiac pains and attacks of blindness.

Alveolar Abscess with Unusual Symptoms.—The onset in the case cited by Harrison resembled that of pneumonia; the symptoms suggested influenza, malaria or typhoid fever. Extraction of two teeth with large root abscesses gave immediate relief.

United States Veterans' Bureau Medical Bulletin, Washington, D. C.

2: 341 433 (April) 1926

Architecture of Lung W. S Miller, Madison, Wis —p 341.
Correlation of Clinical and Laboratory Procedures in Tuberculosis. I. Complement Fixation Test A Josewich and F. Grave, Minneapolis —p 346
*Active Immunization of Guinea Pigs by Urinary Antigens from Cases of Tuberculosis J J. Enright, New Haven, Conn —p. 357.
Occupational Therapy for Psychotics B. W Carr, Washington, D. C. —p 362
Range of Sexual Normality in Psychiatric Case Histories. J. H. Huddleston, New York —p 366
Infection, Exhaustion and Toxic Psychoses H. J. Kellum, Palo Alto, Calif —p 369
Rating of Service Connected Disabilities. T. S Troy, Washington, D C. —p 377
Organization and Administration of Medical Division of Regional Office. W E Kendall, Chicago —p 382
Dental Operations for Tuberculous E W. Stevens, Camp Kearney, Calif —p 388.
*Actinomycosis: Case F Shoemaker, Kansas City, Mo —p. 391
Sinus Infection in Its Relation to Retrobulbar Neuritis J E. Lacy, Harrison, Mont —p 393.

Active Immunization Against Tuberculosis.—The results of Enright's observations are such that he is convinced that attempts to immunize guinea-pigs with partly purified urinary antigens from cases of tuberculosis will have to be made on a scale large enough to rule out definitely the element of chance before it is desirable to make any interpretation of the results.

Actinomycosis of Pleura.—Shoemaker reports a case of *Streptothrix actinomyces* infection of the pleura One interesting feature of this case was the sudden development of a liver abscess after the patient had apparently entirely recovered from the chest condition. While it was not possible to demonstrate the actinomyces in the pus from the liver abscess, or after animal inoculation with this pus, the inference is that the later involvement of the liver was a metastatic process. At no time was the streptothrix demonstrated in the sputum.

Virginia Medical Monthly, Richmond

53: 1-70 (April) 1926

Treatment of Ulcer of Stomach and Duodenum. A. M. Willis, Richmond —p. 1
*Simple Ulcer of Small Intestine. I A. Bigger, University.—p 4.
*Valuable Early Diagnostic Sign in Tabes. J. A Hodges, Richmond —p 7.
Indications for Antisyphilitic Drugs T. L Driscoll, Richmond —p. 8.
Treatment of Pneumonia B M Randolph, Washington, D. C.—p 10.
Treatment of Hemorrhoids by Quinine and Urea Hydrochloride Injection F H Terrell, Richmond —p 13.
Medicolegal Aspects of Morbid Impulses. A. Gordon, Philadelphia —p 16
Nonsurgical Drainage of Bile Tract by Lyon Method. A. G. Brown, Jr, Richmond —p 22
Exophoria: 167 Cases C. A Young, Roanoke —p 25.
Treatment of Chronic Empyema. A. S Brinkley, Richmond —p. 27.
Uterine Curettage E L Kendig, Victoria —p 28
Care of Mind: Preventive of Physical and Nervous Diseases. B. C. Keister, Washington, D C —p 31.
Benign Tumors of Male Breast. F. Helvestine, Jr., Danville —p 35.
Internal Injuries Without External Signs: Case. B F. Eckles, Richmond —p 38
Medical Treatment of Peptic Ulcer G P. Hamner, Lynchburg —p 40.
Chronic Gallbladder Disease: Medical Aspects. W. J. Mallory, Washington, D C —p 41
Cesarean Section H F Kane, Washington, D. C —p 43.
Achlorhydria, One Hundred Cases D. Hamrick and J. E. Wood, Jr, University —p 48
Chief Medical Literature of 1925 W. B Blanton, Richmond —p 51.
Complications of Tonsillectomy G B Gilmore, New York —p 55.

Simple Ulcer of Small Intestine.—In neither of Bigger's two cases could the ulcer be attributed to any specific cause. However, in one case the presence of a prune seed near the site of the ulcer suggested trauma as a possible causative factor. Thirty-four cases of simple ulcer of the intestine are now on record.

"Stair" Sign in Early Tabes.—In Hodges' experience, the "stair" sign has proved valuable in the diagnosis of the early ataxic stage of tabes. The "stair" sign, which determines the patient's ability to descend properly a series of stairsteps, with eyes open, but not directed to his feet, or in certain cases, with eyes closed, thus at one time testing both the muscles and the joints, Hodges regards as one of the most delicate and definite tests of ataxia, and one that is often apparent before other signs of ataxia are evident.

Wisconsin Medical Journal, Milwaukee

25: 165 212 (April) 1926

Chronic Heart Disease J. A Eyster, Madison.—p. 165.
Application of Special Roentgen Ray Methods to Cardiac Diagnosis. F J Hodges, Madison —p 168
Athletic Heart L M Warfield, Milwaukee —p 170.
*Acute Glandular Fever G W. Carlson, E. H. Brooks and V. F. Marshall, Appleton —p 176
Gun Shot Wounds of Abdomen in Civil Life. J W. Steckbauer, Manitowoc —p 179
Convulsions in Infancy and Childhood. M. G. Peterman, Milwaukee. —p. 181

Acute Glandular Fever.—From October, 1924, to May, 1925, a widespread epidemic of an acute infectious disease manifested by involvement of various groups of lymph glands occurred in the locality in which Carlson and his associates reside. There were at least 1,100 cases. The greatest number of cases appeared during January, February and March and had almost subsided the latter part of April. The epidemic was one in which many of the acute infections were present, such as septic sore throat, septic tonsillitis in many cases and acute glandular fever. The complications encountered were otitis media, peritonsillar abscess, nephritis and in one instance, erysipelas. Because of the mildness of the symptoms the disease ran its course unrecognized in many instances. Some of the cases were mistaken for a septic tonsillitis, a septic sore throat, all loosely designated as "grip," or classified as some other acute infection. During the last few years, there have been reported small epidemics of glandular fever in various sections of the country. The authors collected data on 838 cases. This group includes all of the cases reported during the epidemic. From this number they have selected seventy-nine cases which they classify as glandular fever. These cases are analyzed with reference to their clinical history. Acute glandular fever is considered by many as a distinct disease entirely, but the authors are of the opinion that the facts do not altogether justify its classification.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

1: 63-121 (April) 1926

Sclerema Neonatorum. I. Five Cases. G. A. Harrison and J. W. McNee.—p. 63.
Special Schools of London. F. C. Shrubsall.—p. 85.
*Lambliasis as Cause of Chronic Enteritis in Children. R. Miller.—p. 93.
*Remote Prognosis of Empyema in Children. J. M. Smellie.—p. 100.
*Nephritis in Children: Prognosis. D. Paterson and W. G. Wyllie.—p. 103.
Tuberculosis of Childhood. A. Moncrieff.—p. 114.

Lambliasis as Cause of Chronic Enteritis.—Examination of twenty-three children infected with *Lamblia* has convinced Miller that the infection is by no means a rarity in hospital practice among children; that it produces a chronic enteritis; that the resultant diarrhea is often severe enough to cause the subjects of the disease to be considerably below their proper weight, and occasionally will produce retarded development and diminution of growth, suggesting that in lambliasis we have a further possible cause of infantilism of the enteritic type; that even in children true "carriers" may be found, infected with *Lamblia*, but without symptoms.

Prognosis of Empyema in Children.—The examination of thirty-six children from ten to thirteen years after operation for an empyema leads Smellie to the opinion that the remote prognosis is excellent. All show some evidence of scarring of the lung, but it is of negligible extent. So far as Smellie has been able to determine, there is no factor that will enable any forecast of the degree of this fibrosis to be made. The duration of the disease prior to operation gives no assistance, nor does the time required after operation for the healing of the wound; in fact, the average duration of symptoms before operation and the subsequent stay in hospital of Smellie's group showing no clinical fibrosis was practically identical with those averages obtained from the whole thirty-six cases.

Nephritis in Children.—Six deaths occurred among twenty-two cases of acute parenchymatous type, and one death, from other causes, among twenty-seven cases of acute hemorrhagic nephritis reviewed by Paterson and Wyllie. The importance of reexamination at an interval of years is emphasized by the difference in the conclusions which may be based on an immediate prognosis as compared with the results of later investigations. From a general examination the immediate prognosis seemed good in thirteen cases of parenchymatous nephritis and in twenty-six cases of hemorrhagic nephritis. After a period of from three to five years, only five of the parenchymatous patients could be said to have recovered completely, as compared with twelve recoveries in the hemorrhagic group. Six of the parenchymatous and nine of the hemorrhagic patients appeared to be in good health, but had albuminuria and abnormal cellular constituents in the urine. The degree of albuminuria and the quantity of cells present were definitely less in the hemorrhagic type than in the parenchymatous cases. Four out of six cases of postscarlatinal nephritis became chronic. The authors emphasize the importance in postnephritis of the presence of even a very slight trace of albumin when it is associated with an excess of cells in the centrifugalized deposit.

British Medical Journal, London

1: 729-770 (April 24) 1926

Circulatory Changes in Anesthesia: Use of Oxygen. L. Hill.—p. 729.
*Recovery After Massage of Heart. W. G. Ball.—p. 732.
Endocarditis. III. T. Horder.—p. 733.
Chronic Pyloric or Duodenal Ulcer: Posterior Gastrojejunostomy with Jejunojejunostomy. G. G. Gillon.—p. 738.
*Gangrene of Leg in Infant Seven Days Old: Recovery. W. R. Grove.—p. 738.
Stridor Accompanying Measles. E. G. Housden.—p. 739.
Novasurol and Hypertonic Saline in Chronic Edema. D. M. B. Evans.—p. 739.
Poisoning by Products of Combustion of Tobacco Applied to Skin. J. O. Jones and C. E. Morris.—p. 739.

Recovery After Massage of Heart.—In the course of an operation for gastrojejunal ulcer, Ball's patient suddenly stopped breathing and his heart ceased to beat. His head was lowered and oxygen only was passed down the intratracheal tube under intermittent pressure. The stomach was rapidly separated, between clamps, from the duodenum and thrown over to the left side of the abdomen. The heart was then gently massaged through the diaphragm at the rate of about sixty to the minute, artificial respiration being kept up meanwhile; 10 minims of 1:1,000 epinephrine solution was injected into the heart muscle through the chest wall. Three minutes elapsed before any sign of heart movements was noticed, when a single forcible contraction was felt; this was followed by fibrillary twitchings for about ten seconds, and was then succeeded by a series of regular, rapid, feeble beats until gradually it beat with its normal rhythm, but at rather a rapid rate. Shortly after the heart began to beat, the patient commenced to breathe.

Gangrene of Leg in Infant.—Grove believes that the gangrene in his case was due to an embolus caught at the bifurcation of the anterior and posterior tibial arteries. The circulation was reestablished, except in the toes and sole of the foot. Only the toes were lost. As to the origin of this embolus, Grove suggests an abnormal umbilical artery on the right as the most probable source.

1: 771-814 (May 1) 1926

Treatment of Pulmonary Tuberculosis. C. Riviere.—p. 771.
Treatment of Spastic Paralysis in Children. H. A. T. Fairbank.—p. 776.
*Hyoscine in Postencephalitis Lethargica: Influence on Carbohydrate Metabolism. P. K. McCowan, J. S. Harris and S. A. Mann.—p. 779.
Rheumatic Affections. J. L. Orr.—p. 782.
*Pressure by Mesenteric Root on Duodenum: Absence of "Duodenal Ileus." G. Robertson.—p. 783.
*Intestinal Obstruction by Gallstone. R. S. Coldrey.—p. 783.
Arthritic Purpura and Pancreatitis Following Mumps. R. E. Wilson.—p 783
Maldevelopment of Esophagus. W. Dickson?—p. 784.
Brow Presentation. J. Gossip.—p. 784.

Scopolamine in Postencephalitic Lethargy.—Data supplied by McCowan, Harris and Mann show that in patients with postencephalitic lethargy, those with parkinsonian symptoms receive most benefit from scopolamine therapy, and that this clinical improvement is coincident with an "improved" blood sugar curve, which is made to approximate to the normal type. This improvement is due to a specific action of the drug, though suggestion may be a subsidiary factor. This action of scopolamine is only temporary, but prolonged use of the drug does not lead to tolerance or any deleterious effects. The hysterical element in this disease is probably due to lesions of the basal ganglions, and it is suggested that an analogous lesion may account for similar symptoms in hysteria, chorea, etc. Though in the majority of cases the full benefit of scopolamine can be obtained only by hypodermic administration, there is no doubt that in many cases considerable benefit follows its oral exhibition. The scopolamine may be administered either subcutaneously or by mouth. When given subcutaneously it seems to act more powerfully and its effects continue for a longer period than when the oral method is employed. The question of dosage is of some importance. It is best to commence with fairly small amounts and increase until the required effects are obtained. If given hypodermically, a start can be made with $\frac{1}{150}$ grain (0.4 mg.), once a day, and this amount can, if necessary, be increased until as much as $\frac{1}{50}$ grain (1.3 mg.) is being given once a day. When administered by mouth, larger doses may be given thrice daily, preferably just after meals, since if given before food the dryness of the mouth and throat makes mastication and deglution somewhat difficult and unpleasant.

Pressure by Mesenteric Root on Duodenum.—Robertson relates the case of a multipara, who on the fourth day following the birth of her last full-time child got out of bed and soon felt giddy. A severe headache followed, and was accompanied by severe vomiting. No pyrexia existed. These symptoms continued for four weeks. Vomiting was "propulsive" in type, of daily occurrence and was usually accompanied by headache but seldom by nausea. The vomit was partly digested food, and was occasionally bilious in character. By the end of a month the patient became very emaciated, and fits of a cerebellar type developed and became frequent. At this stage Robertson saw her, in consultation with her doctor. She was then considered too enfeebled for operation, and very soon she died. Necropsy showed (1) a tuberculoma, the size of a walnut, of the left cerebellum and (2) extensive tuberculous disease of the abdominal lymph glands. There was not a lymphatic area unaffected. Many of these caseous glands were as large as a small hen's egg; most were somewhat smaller. The mesenteric root was very thick and heavy with large caseous glands. There was not even a suggestion of "duodenal ileus."

Intestinal Obstruction by Gallstone.—Coldrey's patient had been treated from time to time by a physician for gallstones; because her general condition was very poor, no operation had been advised. She had had typical attacks of gallstone colic, clay-colored stools, and dark urine. Then symptoms developed suggesting acute intestinal obstruction, but before an operation could be performed, the woman passed by the rectum a huge gallstone, 2 inches (5 cm.) long and just over 1 inch (2.5 cm.) through, and barrel shaped.

Indian Medical Gazette, Calcutta

111: 105-156 (March) 1926

Differential Diagnosis in Tropics. A. H. Proctor.—p. 105.
Treatment of Lacerated Wounds Within Two Hours. R. J. L. Sladen.—p. 113.
Bombay Millponds and Anopheline Control. B. S. Chalam.—p. 115.
*Inefficiency of Mercurochrome in Treatment of Malaria. J. D. Dundas and D. M. Telang.—p. 116.
*Indian Digitalis R. N. Chopra and P. De.—p. 117.
Antimony and Filariasis. P. R. Rao.—p. 121.
*Treatment of Intestinal Obstruction with Belladonna. B. D. Pande.—p. 121.
Snake-Bite Due to Lachesis Cantoris. A B.-D. Castro.—p. 123.
Persistent Hiccup Treated Successfully by Injections of Procaine into Phrenic Nerve. D. M. Ghose —p. 124.
Two Cases of Liver Abscess. M. Khan.—p. 124.
Cervical Rib Causing Unilateral Brachial Neuritis. J. N. Sen.—p. 126.
Vesical Calculus with Enlarged Prostate in Man Aged 85. K. Ram.—p. 127.
Complete Avulsion of Scalp. W. L Brookes —p. 128.
Case of Poisoning from Clitoria Ternatea R. S. Rajan.—p. 128.
Case of Fibrocystic Tumor of Uterus E F. Neve.—p. 129.
*Night-Blindness Due to Ascaris Lumbricoides Infection. A. R. Harigopal.—p. 130.
*Case of Embolism of Spinal Cord. M P Chacko.—p. 130.

Mercurochrome in Treatment of Malaria.—In six cases of malaria, Dundas and Telang injected mercurochrome-220 soluble, in 1 per cent solution, intravenously, the actual dose varying with the patient's weight, and being approximately 0.003 Gm. per kilogram of body weight. It had no effect on the malarial parasites, even after two doses. Stomatitis and ptyalism were marked features in every case. The drug appears to irritate the kidney tissue to the extent of producing mild nephritis.

Indian Digitalis.—Chopra and De found that digitalis leaf of good quality grows in the valley of Kashmir (northern Himalayas) and at Mungpoo (eastern Himalayas). Improvements in methods of drying and storage are recommended to get a uniform quality.

Belladonna in Intestinal Obstruction.—Pande cites twenty-seven cases of intestinal obstruction, acute and chronic, not advanced to the stage of ileus, in which he gave tincture of belladonna, in 30 minim (1.9 cc.) doses, every hour, till physiologic symptoms appear, when physostigmine and pituitary extract are exhibited if the intestines do not start acting. In a certain proportion of cases, in which the intestines did not act of themselves, in order to start their action, enemas of soap suds in lukewarm water were given frequently, and also at intervals high rectal enemas to which a liberal amount of castor oil or sweet oil is added. This facilitates the easy passage of a hard fecal mass which may be acting as a plug. If the belladonna is not well tolerated owing to extreme sensitiveness of the stomach, hypodermic injections of atropine should be first started and then followed by belladonna by the mouth, which is the route that is generally followed.

Night Blindness Caused by Ascaris.—In Harigopal's case, the patient, aged 6, became blind directly after sunset each evening, while if he left a brightly lighted room for a darker passage, he had to grope his way. There was no history of any serious illness, and no evidence of hereditary syphilis. There was a history, however, of his having passed worms, and of grinding of the teeth during sleep and of convulsions at the age of 2 years. Accordingly santonin and calomel were given, followed by castor oil. A large number of roundworms were passed, after which the night blindness cleared up completely.

Embolism of Spinal Cord.—Chacko's patient had an inflamed varicose vein from which it was evident that septic emboli were lodged in the spinal vessels; causing a complete paraplegia. The infected embolus set up an acute myelitis.

Lancet, London

18: 895-948 (May 1) 1926

*Visceral Pain and Referred Pain. J. A. Ryle.—p. 895.
*Surgical Treatment of Chronic Duodenal and Gastric Ulcer. L. R. Braithwaite.—p. 900.
*Ischemic Necrosis of Heart. E. Bulmer and F. W. M. Lamb.—p. 904.
Treatment of Chronic Dysentery. R. E. Drake-Brockman.—p. 905.
Value of Sphygmomanometer in Cardiac Diagnosis. T. S. Wilson.—p 906.
*Lethal Effect of Ultraviolet Light on Normal and Malignant Tissues Grown in Vitro. W. Moppett.—p. 907.
Osteomyelitis of Fifty-Six Years' Duration. G. B. W. Walker.—p. 908.

Visceral Pain and Referred Pain.—Ryle discusses pain associated with disease of the hollow viscera. He asserts: (1) that there is a true visceral pain felt by the viscus; (2) that visceral pain is due to an abnormal increase in the tension of the muscular element of the wall of the viscus, this increased tension resulting either from contraction or from a failure on the part of the muscle fiber to relax adequately in the presence of increased intravisceral pressures; (3) that visceral pain when occurring alone, or dissociable from attendant somatic pains, may be accurately localized by the patient; (4) that referred somatic pain and tenderness, e. g., the viscerosensory reflexes, and the associated visceromotor reflexes, although they may accompany a severe visceral crisis of mechanical origin, more frequently express an inflammatory lesion of the viscus, and (5) that, when persistent, they invariably express organic disease of the viscus of an inflammatory kind.

Cholecystogastrostomy for Peptic Ulcer.—Braithwaite considers cholecystogastrostomy as the operation of choice for inaccessible gastric ulcer. Cholecystogastrostomy brings only bile into the stomach; it obviously does not bring in pancreatic or normal duodenal fluid; thereby the undoubted beneficent effect of bile alone is proved, and it may be more than a simple reduction in acidity; bile may have other powerful qualities in the reduction of gastric disturbances. Braithwaite has done eighteen of these operations, sixteen for gastric ulcer in which excision or destruction of the ulcer was impossible or would have been very dangerous, one for a recurrent, intractable duodenal ulcer, and one for a hyperchlorhydria and pyloric spasm with typical duodenal symptoms. In the two latter cases, a cholecystoduodenostomy was performed just beyond the pylorus. Four patients are in the hospital now; results in the other cases have been most encouraging. No single patient has suffered in any way from the flow of bile into the stomach. In fact, there is nothing whatever to show that anything unusual has been done.

Ischemic Necrosis of Heart.—Bulmer and Lamb report the case of a man, aged 27, whose death, after a typical subacute or chronic nephritis with frequent acute exacerbations, was clinically due to coronary occlusion, and was diagnosed as such. At necropsy, the picture was that of subacute nephritis with a generalized arterial degeneration of a fatty type, with a terminal thrombosis of the left coronary artery at the site of an atheromatous ulcer.

Effect of Ultraviolet Rays on Tissues Grown in Vitro.—It appears from Moppett's study that various normal and malignant tissues have different powers of resistance; the kidney is the most sensitive, the heart next, and the spleen cells, which may be regarded as comparatively undifferentiated, require a lethal dose approaching that for sarcoma. The malignant tissues, however, are definitely more resistant to ultraviolet rays than normal tissues when grown into vitro in this way.

Bulletin de l'Académie de Médecine, Paris

95: 379-382 (April 13) 1926

*Urea and Secretion Index with Hypertension. Richard and Roesch. —p. 380.

The Urea and Secretion Index in Cases of Hypertension.—Richard and Roesch list the findings with the Ambard coefficient, the urea content of the blood, and the record of the diastolic and systolic pressures over long periods of time. In 23.4 per cent of their thousand patients with high blood pressure thus investigated, the Ambard coefficient was normal. This percentage would be 55.2 per cent if all coefficients below 0.100 were accepted as normal. Determination of the urea content of the blood alone is no criterion for the functioning of the kidneys.

Bulletins de la Société Médicale des Hôpitaux, Paris

50: 509-578 (March 26) 1926

*Rheumatism of Tuberculous Nature. P. Harvier et al.—p. 509.
Etiology of Infectious Jaundice. I. Bruhl and M. Ferru.—p. 512.
Dystrophy of Skin and Genitals from Syphilis. Laignel-Lavastine and H. George.—p. 515.
Diabetes Insipidus. M. Labbé and Azerad.—p. 519.
Bengal Rose in Liver Function Test. Fiessinger and Walter.—p. 525.
*Sulphur in Melanoderma from Cirrhosis. M. Loeper et al.—p. 535.
*Vital Capacity with Heart Plus Lung Disease. Caussade et al.—p. 542.
Intensive Treatment of Acute Rheumatism. Caussade et al.—p. 550.
*Roentgen-Ray Treatment of Hemogenia. I. Goia.—p. 555.
*Night Cough with Endocarditis. J. Hatzieganu et al.—p. 559.
Etiology of Mumps. Y. Kermorgant.—p. 564.
Venous Septicemia with Cancer of Ovary. Merklen et al.—p. 567.
Treatment of Hemogenia. P. Merklen and M. Wolf.—p. 572.

Chronic Rheumatism of Tuberculous Origin.—Harvier, Rachet and Lemaire's patient, aged 40, developed chronic rheumatism after three acute attacks, twenty-three, four and three years before. The affection was located in the shoulder and limb joints. Roentgenograms demonstrated lesions of the joints and bones. Repeated bronchitis and anal fistula were among the signs suggesting the diagnosis of tuberculosis, and inoculation of guinea-pigs with the effusion from the knee joint induced in them a tuberculous process.

The Blood Sulphur in Melanoderma with Cirrhosis.—Loeper, Decourt and Ollivier emphasize that the sulphur content of the blood increases in bronzing cirrhosis as well as in Addison's disease. The sulphur is retained in the liver; considerably more sulphur is found in the portal vein than in the suprahepatic. The liver also retains amino-acids. Sulphur and amino-acids are carried to the liver from the intestine, where they originate from the food; they are carried also from the spleen, as a product from hemolysis. Sulphur and amino-acids compose the melanin. The liver receives also iron from destroyed red corpuscles in the spleen or blood. The three substances are oxidized, retained or destroyed in the liver. This functioning is disturbed in the pathologic liver, entailing accumulation of these substances and simultaneous appearance of melanin and iron pigmentations. Hence, the bronzing from the suprarenals and that with hepatic cirrhosis are induced by a similar process.

Vital Capacity in Heart Plus Lung Disease.—Caussade, Guillaume and Evrard measured the vital capacity of seven subjects with heart and lung disease. It was done during maximal exhalation of air into a spirometer, following a maximal inspiration. The coefficient of vital capacity appeared decreased in all. The reduction paralleled the pathologic process, also the course of the disease. The vital capacity was lowered with complications; it rose under the influence of treatment. Evidently the vital capacity may reveal an improvement in the heart and lung functioning, serving as a kind of barometer.

Favorable Action of Roentgen Rays on Hemogenia.—Goia used the treatment in a grave case of hemogenia, the so-called false hemophilia. The rays were applied to the spleen for fifteen minutes, and the bleeding from the nose and gums stopped the same day. The bleeding time, at the right ear, dropped from 105 to thirty-five minutes; at the left ear, from ten to five minutes. The general condition was notably improved by the fourth day; the ecchymoses and petechiae tended to disappear; the bleeding time at each ear was three minutes. The patient recovered completely in ten days. Examination of the blood showed only a few blood platelets. This seems to prove that not thrombopenia, but other factors are responsible for the hemogenia, especially endothelial lesions of the vessels. The favorable action of the roentgen rays may be ascribed to their distant influence on the endothelial cells of the vessels, since these cells are part of the system to which the reticular tissue of the spleen belongs.

Night Cough in Chronic Infectious Endocarditis.—Hatzieganu, Telia and Daniello call attention to paroxysms of coughing occurring always before midnight in patients with slow infectious endocarditis. They found the cough symptom in 80 per cent of their cases. It seemed to precede any clinical sign of heart insufficiency, its intensity corresponding to the fever. Exaggeration of the cough was sometimes observed before reappearance of fever. Specific recurring bronchitis accompanying the endocarditis may enhance the irritability of the *intrapulmonary nerve* terminals. This is favored by the recumbent position.

Encéphale, Paris

21: 161-232 (March) 1926

Histologic and Clinical Study of Tabes. G. R. Lafora.—p. 161.
A Meyer's Theory of Dementia Praecox. H. Flournoy.—p. 180.
Hysteric Contractions of Eye Muscles. O. Balduzzi.—p. 195.

21: 233-304 (April) 1926

Mirror Writing. W. Sterling.—p. 233.
*Mental Symptoms in Spirochetal Jaundice. A. Hesnard.—p. 250.
Mental Dissociation in Dementia Praecox. X. Abély.—p. 260.
Necropsy Findings in Epidemic Encephalitis. Claude and Cuel.—p. 272.
Spasmodic Facial Paralysis with Deviation of Head and Eyes. D. Paulian.—p. 275.

Mental Derangement with Spirochetal Jaundice.—In Hesnard's case the disease started with chills and dizziness, followed the next day by epileptiform convulsions and contractions. These meningeal symptoms vanished as soon as the jaundice appeared, two days later. Uremia with oliguria developed the fourth day, accompanied by a delirious form of mental confusion. This continued until death, the eleventh day. The mental disturbance in this case was evidently due to kidney insufficiency, complicating insufficiency of the liver.

Liége Médical

19: 289-311 (April 18) 1926

*Retrogasserian Operation for Facial Neuralgia. L. Christophe.—p. 289.
Oscillometry in Obstetrics. Gosselin.—p. 293. C'cn.

Operative Treatment of Facial Neuralgia.—Christophe severed the sensory root of the gasserian ganglion in a man who had suffered from ophthalmic neuralgia of the trigeminus for ten years. The last four years the painful paroxysms had occurred as often as four or five times a day. The operation (February 20, 1926) was performed after all measures, including alcohol injections, had failed. The pains of the major neuralgia disappeared at once and permanently. Cutting the retrogasserian motor root entailed only slight disturbance in mastication, but there is still a mild neuroparalytic keratitis which is improving.

Paris Médical

59: 341-356 (April 10) 1926

Insulin in Treatment of Diabetes. F. Rathery.—p. 341.
The Rhythm of Diuresis. R. Porak.—p. 349.
Muscular Hypotonus in Early Diagnosis of Tabes. Hodjitch.—p. 353.
Facial Neuralgia of Dental Origin. W. Dufougeré.—p. 354.

59: 357-384 (April 17) 1926

"Thermal" Waters in Treatment of Infectious Intestinal Disease. G. Sanarelli.—p. 357.
*Climate in Treatment of Tuberculosis. L. Bernard.—p. 364.
*Mineral Water Treatment of Hypertension. J. Cottet.—p. 368.
Catalytic Action of Sulphur. H. Flurin.—p. 372.
Cannes as a Climatic Health Resort. Bufnoir and Gimbert.—p. 376.
Vichy Treatment of Diabetes. G. Monod.—p. 380.

Influence of Climate in Treatment of Tuberculosis.—Bernard specifies that an altitude of from 1,000 to 1,200 meters, above sea level, is most suitable for the sojourn of the tuberculous. At this height, the air is pure, dry, and sudden changes of temperature are less likely to occur. The air at this altitude exerts a tonic action and suits perfectly patients with slight fever and minimal or moderate lesions. It is not favorable for those with persisting high fever or tendency to hemoptysis. An altitude of from 1,500 to 1,800 meters may have too stimulating an action, entailing increase of fever, sleeplessness, and respiratory and digestive disturbances. Humidity is not borne well by the tuberculous; nevertheless, humidity from rain and fogs seems to do much less harm than that from damp clay ground. Wind is of all atmospheric conditions the most injurious for the tuberculous. While sea air has a beneficial action on the tuberculous, seashore air may do harm, since atmospheric changes occur there frequently. Quiet, stable atmospheric conditions should be sought.

Mineral Water Treatment in High Blood Pressure.—Cottet emphasizes that the action of mineral water treatment may depend on the way in which it is used. Carbonated baths influence the arterial vasodilatation, the peripheral as well as the central, by way of certain skin reactions. They reduce the arterial tension, and stimulate the heart functioning. Drinking mild mineral waters stimulates kidney functioning, enhancing diuresis. The bath treatment will be more important in cases with high blood pressure chiefly associated with heart disturbances, while oral use of mineral water will be preferable, for instance, in Bright's disease with uremia.

Presse Médicale, Paris

34: 401-416 (March 31) 1926

Primary Aspergillosis of the Lung. M. Macaigne and P. Nicaud.—p. 401.
"Surgical" Extraction of Teeth. L. Monier.—p. 404.
Removal of Brain Hemispheres. L. Binet.—p. 405.

34: *417-432 (April 3) 1926*

The Phenomena of Shock and Shock Therapy. L. Bard.—p. 417.
Enucleation of Ovum Intact in Cesarean Section. Fournier.—p. 421.
The Teaching of Surgery. Barthélemy.—p. 427.

34: 433-448 (April 7) 1926

*Surgical Diathermy in Metritis. P. Flandrin and L. Schil.—p. 433.
Chronic Congestion of the Kidney and Chronic Nephritis. Porge.—p. 433.
Sympathectomy for Bone and Joint Tuberculosis. G. Ichok.—p. 435.

High Frequency Currents in Treatment of Cervical Metritis.—Flandrin and Schil report the results of a year's work in this line. Surgical diathermy was applied in cases in which the cervix appeared enlarged, soft, the mucosa protruding and the process discharging. The active electrode was applied directly to the ulceration in the cervix. The sittings were brief, and were repeated at intervals of a week or two. After each sitting a picric acid dressing was applied for a day; then hot douches twice a day. After from three to six sittings, the outline of the external cervical orifice became normal, the ulcerations disappeared. The cervix was supple and permeable. Leukorrhea gradually improved. Electric sparking was employed in resisting and recurring ulcerations with slight eversion of the cervix and a profuse mucopurulent discharge. The electrode was applied at a short distance from the lesion, once or twice a day. Brush discharge was used as an adjuvant or alone in recent lesions. The high frequency currents did not cause any pain; anesthetics were never required. Cases in which amputation of the cervix seemed to be inevitable were cured by this method. Ten or eleven women were reexamined after a year. The clinical recovery had persisted in all. One of them became pregnant soon after the treatment, and delivery was perfectly normal.

34: 449-464 (April 10) 1926

Oscillometer Findings in Raynaud's Disease. H. Grenet and P. Isaac-Georges.—p. 449.
Syphilis in Northern Africa. J. Montpellier.—p. 451.
Exotic and Nervous Syphilis. A. Sézary.—p. 452.
*Palm-Chin Reflex in Facial Paralysis. A. Radovici.—p. 453.
*Hiccup in Tuberculous Meningitis. L. Langeron et al.—p. 455.

Palm-Chin Reflex in Facial Paralysis.—Radovici and Marinesco called attention in 1920 to a skin reflex, the palm-chin reflex. Irritation of the palm of the hand with a needle may be followed by rising of the corresponding half of the chin. This facial reflex was found in 60 per cent of normal subjects. Tests were made on twenty-five patients with facial paralysis and eleven with hemiplegia. Persistence or exaggeration of the palm-chin reflex, *on the affected side*, suggests a central origin for the paralysis. Absence of the reflex on the affected side, and its presence on the sound side are symptomatic of peripheral paralysis. Existence of the reflex on both sides, in a patient with facial paralysis, testifies to a central origin of the affection. Absence of the reflex on both sides has no diagnostic value, since this may occur also in normal persons.

Localization in the Spinal Cord of Hiccup Lesions.—Langeron, Dechaume and Petouraud describe a case of tuberculosis of the lung, with terminal meningitis, myoclonus and persisting hiccup. The microscopic findings showed that the tuberculous meningitic lesions were predominantly located in the cervical segment of the spinal cord, especially in the motor zone, where the phrenic nerve originates. The medulla presented only signs of inflammation, and was free from specific lesions.

Revue de Chirurgie, Paris

63: 5-61 (Jan.) 1926

"Trochanter-Shaft" Fracture of the Femur; Five Cases. Monod.—p. 5.
Metatarsophalangeal Dislocation of Toes. E. Mourgue-Molines and J. Vidal.—p. 26.
*Sympathectomy for Peripheral Tuberculosis. R. Fontaine.—p. 53.

Periarterial Sympathectomy for Surgical Tuberculosis.—Fontaine applied the operation in six cases of bone, joint or skin tuberculosis. Considerable amelioration, with tendency to recovery, was manifest in a case with suppuration and fistula of the wrist, also in a rebellious lupus of the face and leg, with lesions of the tarsal bones. Elimination of sequestra became more rapid, and suppuration stopped after the operation. In one case the sympathectomy was combined with resection of the bone. The operation failed in three recent cases of bone and joint tuberculosis. The consecutive vasodilatation may have favored the growth of tubercle bacilli.

Revue Médicale de la Suisse Romande, Geneva

46: 129-196 (March 10) 1926. Dedicated to D'Espine and Picot

Spastic Paralysis in Young Children. J. Comby.—p. 130.
Treatment of Eczema in Infants. E. Feer.—p. 137.
*Polyarthritis in a Syphilitic Child. P. Nobécourt.—p. 144.
Graphic Analysis of Typhoid Statistics. C. Pirquet.—p. 150.
Dystrophy of Alimentary Origin in Young Children. G. Mouriquand.—p. 155.
*Acute Cerebral Tremor in Children. E. Wieland.—p. 162.
Condensed Milk in Infant Feeding. J. Taillens.—p. 181.
Gland Fever and Kidney Complications. P. Gautier.—p. 190.

Chronic Polyarthritis in Congenital Syphilis.—In Nobécourt's patient, a girl aged 15, the joint affection had started four years before, involving gradually the joints of the knees, ankles, wrists and hands. The lesions were bilateral and symmetrical, accompanied by atrophy of adjacent muscles and swelling of corresponding glands. The Wassermann test was positive in the blood. Under arsenical treatment the girl recovered; the joints became normal, the Wassermann test weaker. It is possible that joint lesions with congenital syphilis may be due not only to a local action of the spirochetes, but also to a general dystrophy. Nothing to indicate derangement of function in any endocrine glands could be incriminated in this case.

Acute Cerebral Tremor in Young Children.—In two of Wieland's three cases the tremor appeared after pneumonia; it was mild and without fever. The third case occurred after a gastro-intestinal affection, and was accompanied with fever and signs of cerebellar ataxia, especially a general hypotonia. There were no changes of mental or sensory character, no paralysis or spasms. It was a general intention tremor, most marked in the hands and feet; it decreased during rest, and disappeared in sleep. The children were about 3 years old; they recovered within a few weeks or months, without sequelae. The lack of cerebral or pyramidal symptoms suggested an extrapyramidal lesion, entailing a transient disturbance in the tract which controls the balance and synergy of the muscles. There are evidently vascular lesions induced by an infection. He has collected from the literature thirty analogous cases of benign cerebral tremor without signs of compression, all with recovery in a few weeks or months.

Revue Neurologique, Paris

1: 289-416 (March) 1926

The Cerebral Peduncle and Its Subthalamic Contingents. F. d'Hollander and T. Rubbens.—p. 289.
Opaque Vertebrae and Condensing Osteitis. Sicard et al.—p. 309.
Scleroderma from Insufficient Genital Glands. S. Bau-Prussak.—p. 316.

1: 417-512 (April) 1926

Cerebral Disturbances with Injury of Cervical Sympathetic. V. Neri.—p. 417.
*A Familial Nervous Affection. G. Roussy and G. Lévy.—p. 427.
Pigmented Tumor of Spinal Cord. N. Ringertz.—p. 451.

Peculiar Familial Affection of the Nervous System.—Roussy and Lévy describe an affection observed in seven members of a family (two sisters, a brother and four children). The age of the patients ranged from 2 to 38. Unbalanced movements in the gait and in the erect position, general abolition of tendon reflexes, and bilateral or unilateral club foot formed the main symptoms. There were no cerebellar symptoms or changes of sensibility, no muscle atrophy or scoliosis. The cranial nerves appeared intact; nystagmus was never noted. The speech and mental faculty were undisturbed. The affection first became apparent as the children started to learn to walk, and no progressive tendency was apparent. The affection evidently differs from Friedreich's disease or the Charcot-Marie type. It appears as a morbid entity, with an unknown etiology so far. Congenital syphilis should be borne in mind. The lesions seem to be located in the posterior and lateral columns of the spinal cord, or in ganglion cells connected with the anterior horns.

Schweizerische medizinische Wochenschrift, Basel

56: 337-360 (April 17) 1926

*Changes of Birds' Thyroid. V. Haecker.—p. 337.
*Injury of Eye from Infra-Red Rays. A. Vogt.—p. 341.
*Constipation and Endocrinology. A. Oswald.—p. 342.
Art as Form of Psychotherapy. H. Schwerdtner.—p. 345.
Complementary Enterostomy. R. Hoffmann.—p. 346.

Changes of Birds' Thyroid.—Haecker found at Halle large thyroids in crows shot during fall and winter (left lobe, maximum 41.6 cmm.). The glands were small in spring and early summer (minimum 5 cmm.). There were also histologic changes. The crows shot at Davos in April had larger thyroids than at Halle.

Injury of Eye from Infra-Red Rays.—Vogt produced grave injuries of the lens, retina and choroid by short infrared rays. Ultraviolet rays damage only the conjunctiva and cornea.

Constipation and Endocrinology.—Oswald emphasizes the frequency of hypothyroid constipation. Substitution therapy has excellent results. In other cases, injections of pituitary preparations may aid. He attributes spastic constipation to hyperthyroidism.

Archivio Italiano di Chirurgia, Bologna

15: 1-116 (Jan.) 1926

*Thyroid Grafts. G. Boattini.—p. 1.
*Trachea to Bridge Gap in Artery. P. Leone.—p. 15.
Pancreas Function After Resection of Stomach. A. Ciminata.—p. 21.
*Cystectomy in Women. A. Cassuto.—p. 51.
Echinococcosis of the Lung. O. Cignozzi.—p. 57.
*Mishaps with Local Anesthesia. R. Riccio and F. B. La Rossa.—p. 85.
Angioma in Thigh. A. Biancheri.—p. 101.

Thyroid Grafting.—Boattini implanted scraps of thyroid tissue after partial or total thyroidectomy in rabbits, rats and dogs. These and his previous experiments confirm the possibility of the healing in place and persistence of function of homoplastic grafts of thyroid tissue. The graft heals best and becomes more abundantly and completely vascularized when implanted in the subcutaneous tissue of the abdomen.

The Trachea as Plastic Material.—Leone reports the successful use of a segment of a trachea to bridge a complete gap in an artery. The lumen of the trachea persists almost intact, reducing the tendency to thrombosis to the minimum. The arterial endothelium proliferates so abundantly that the junction is soon a solid union, and the endothelium crowds out the mucosa lining. The trachea retained its vitality, and the perichondrium even displayed a certain proliferative tendency.

Total Cystectomy in Women.—Cassuto extols the advantages of evacuating almost the entire contents of the small pelvis, from the rectum to the pubis. The ureter stumps are sutured to the skin, brought out through the rectus muscles. The patient must be adequately prepared for the intervention, first diverting the urine with a high lumbar fistula. He attributes to the lack of this preparation the fatal outcome in the one clinical case in which the method has been applied to date. The patient had uremia and an unfavorable Ambard index besides her bladder cancer.

Mishaps in Local Anesthesia.—Riccio and La Rossa discuss the share of procaine and of epinephrine in the untoward by-effects. They have found records of slight collapse in seven cases, tachycardia in two, a rise in temperature (to 39 C.) in six, headache or vomiting, two each, and intense agitation in three. A postoperative necrosis developed in fourteen cases, and secondary hemorrhage in fifteen. Fifteen fatal cases have been recorded. They incriminate the epinephine for nearly all these mishaps, and in particular for the fatalities with thyroidectomy and tonsillectomy. With hypertension, the additional rise under epinephrine may arrest the heart action.

Pediatria, Naples

34: 393-448 (April 15) 1926

*The Dick Test. M. Giuffrè.—p. 393.
The Purpuras of Children. C. Gallo.—p. 404.
Creatinine Excretion. V. Tripputi.—p. 415.
*The Pirquet Test and Vaccination. L. Ricciardi.—p. 421.
Encephalopathies. A. de Capite.—p. 426.

The Dick Test.—Giuffrè prepared toxins from streptococci of various sources (erysipelas, pus, etc.). They produced skin reactions in about the same percentage of normal subjects as has been found in America when using Dick's toxin. He had occasion to use his toxins in twelve subjects before, during and after scarlet fever. In three of them the results were constantly negative. In seven, the positive reaction turned to negative and remained so. In two, this negative reaction again changed back to positive.

The Pirquet Test and Vaccination.—Ricciardi found that tuberculous children develop tuberculin anergy, or at least a weaker reaction during vaccination against smallpox.

Revista Española de Medicina y Cirugía, Barcelona

9: 1-66 (Jan.) 1926

Digestive Disturbances in Infants. M. Torelló Cendra.—p. 1.
Dacryocystorhinostomy. Campos.—p. 5.
*Pituitary Extract and Asthma. Rogelio Buendia.—p. 7.
Association of Two Microbes in Etiology of Infectious Diseases. Casimiro Bonmatí.—p. 9.
Bacteriophage in Hygiene and Therapeutics. J. Salvat Marti.—p. 11.
Proteins in Relation to Liver Disease. P. Farreras.—p. 16.

Pituitary Treatment of Asthma.—Buendia explains on a neurohormonic basis the action of pituitary extract in permanently curing or materially relieving fully 70 per cent of his cases of asthma. His series includes some that had been refractory to epinephrine and all other measures, and some of twenty years' standing. This treatment has the advantage over epinephrine that high blood pressure is not a contraindication for it. He injects subcutaneously 1 cc. of the extract of the posterior lobe.

Revista Médica Latino-Americana, Buenos Aires

11: 551-705 (Dec.) 1925

"Black Cardiacs" and Sclerosis of Pulmonary Artery. R. A. Bullrich and O. Behr.—p. 551.
*Immunization Against Diphtheria. M. Ponce de León.—p. 607.
*Efficacy of Radium in Treatment of Ozena. E. Casterán.—p. 629.
*Blocking the Superior Maxillary. J. Ubaldo Carrea.—p. 635.
Sclerosis of the Lungs. E. Soza.—p. 649.
Genu Valgum; Pathology and Surgical Treatment. Guadagnini.—p. 661.

Anatoxin in Immunization Against Diphtheria.—Ponce de León states that the mortality of the 5,903 cases of officially recorded diphtheria in the last seven years in Uruguay was 11 per cent. This formed from 0.02 to 0.09 per cent of the total mortality. He became convinced of the efficacy and harmlessness of anatoxin by experiments on guinea-pigs and horses. Ramon's technic was not strictly followed, as he could see no difference in the effect when only 1.5 per thousand of the formaldehyde solution was used, and the fluid kept only at 37 C. for thirty or forty days (Ramon uses a 3 or 4 per thousand solution and heats to 40 and 42 C.). Of 400 children under 12 given the Schick test, 48 per cent responded with a positive reaction. These were injected in the thigh with 0.5 cc. of the anatoxin. In twenty days the Schick test was positive only in 78 per cent. These were then given a second injection of anatoxin; twenty days later only 2 per cent responded positively, and these became negative after a third injection. The local reaction was practically absent. He found that the anatoxin retained its potency unimpaired for six or eight months at least.

Radium Treatment of Ozena.—Casterán relates that all the symptoms subsided in the ten cases of ozena reported in which radium had been applied to the nasal fossas, according to Vasilia's technic. In one case the ozena was of ten years' standing.

Blocking the Superior Maxillary Nerve.—Ubaldo Carrea gives nine large roentgen-ray pictures showing the exact technic for blocking the trunk of this nerve by introducing *a long fine straight needle through the posterior palatine* canal to the pterygomaxillary fossa. This technic avoids large vessels and anesthetizes the entire region supplied by the superior maxillary.

Semana Médica, Buenos Aires

2: 1585-1640 (Dec. 24) 1925

Mixed Tumor of Kidney in Girl C Lagos Garcia.—p. 1585.
The Ovary and Carbohydrate Metabolism. V. Peradotto.—p. 1591.
Prophylaxis of Cancer. F. C. Guerrini.—p. 1606.
False Osteomalacia of the Pelvis A. J. Guiroy.—p. 1609.
Teaching of Anatomy. Lewis.—p. 1612. Idem. Gutiérrez.—p. 1613.
*Aneurysm of Descending Aorta. O. E. Adorni.—p. 1614.
Dupuytren Contracture of Traumatic Origin. Masciotra.—p. 1615.
Three Greek Medical Inscriptions. A. Walter.—p. 1617.
Frequency of Initial Forms of Chronic Pulmonary Tuberculosis. O. P. Curti.—p. 1620.
Factors Influencing Effect of Artificial Feeding of Infants. M. Etchegaray.—p. 1622.

Cantani's Sign of Aneurysm of the Descending Aorta.—Even before roentgenoscopic examination, Adorni was able to affirm the existence of the aneurysm from the fact that the heart sounds could be distinctly heard on auscultation of the spine from the second dorsal vertebra to the first lumbar. They could be heard also but less distinctly along the left paravertebral line, from the third to the eleventh dorsal vertebra. The heart sounds could not be distinguished in the supraspinous and infraspinous fossas nor on the right paravertebral line. Cantani called attention in 1922 to the transmission of the heart sounds to the spine as an early sign of aneurysm of the descending aorta.

Archiv für Verdauungs-Krankheiten, Berlin

37: 1-523, 1926. Dedicated to L. Kuttner

Spasms of Digestive Tract. M. Einhorn and T. Scholz.—p. 1.
Nervous Anorexia. K. Faber.—p. 17.
Air Content of Intestine. R. Asch.—p. 30.
*Feeding by the Rectum. I. Boas.—p. 37.
Visualization of Gallbladder. Borchardt and Rabau.—p. 54.
Action of a Laxative. E. Fuld and J. Tugendreich.—p. 59.
Relations Between Digestive Tract and Female Sex Organs. A. Koblanck. —p. 72.
Treatment of Mechanical Ileus. W. Körte.—p. 83.
Pathology of Nodular Dysentery. L. Pick.—p. 102.
Prognosis of Insulin in Coma. P. F. Richter.—p. 119.
Nervous Rhinitis. A. Kuttner.—p. 128.
*Predisposition to Ulcers. H. Strauss.—p. 133.
Surgery of Perforated Peptic Ulcer. Mühsam and Unger.—p. 140.
Idem: Remote Results. E. Unger and M. Fuss.—p. 154.
*Skin Sign in Gastric Cancer. K. Brandenburg.—p. 156.
Tuberculosis of Reticulo-Endothelial System. Friedemann.—p. 167.
Liver—Syphilis—Arsphenamine. A. Buschke and E. Langer.—p. 173.
Bronchoscopy. H. Claus.—p. 196.
*Idiosyncrasies of the Eye. O. Fehr.—p. 200.
Injuries from Roentgen Diagnosis. M. Levy-Dorn.—p. 206.
Diathermy in Gastro-Intestinal Disease. A. Laqueur.—p. 218.
*Carbohydrate Cleavage. J. Wohlgemuth and Sorochowitsch.—p. 225.
Agglutination of Colon Bacilli. K. Meyer.—p. 239.
Periarteritis Nodosa. E. Christeller.—p. 249.
Bactericidal Duodenal Fluid. W. Löwenberg.—p. 274.
Tender Points and Head's Zones in Diagnosis. Friedlaender.—p. 297.
Roentgen Treatment of Peptic Ulcer. W. Nauenberg.—p. 305.
Tests for Gastric Motility. F. Riesenfeld-Hirschberg.—p. 313.
Nicotine and Digestion. G. Noah.—p. 319.
Atoxyl-Resistant Lipase. D. Kwilecki.—p. 336.
Blood Bilirubin and Gastric Ulcer. G. Scherk.—p. 344.
Cholecystography. Bescht.—p. 349. Idem. Heinemann.—p. 422.
*Electrometric Stomach Tube. R. Unger.—p. 358.
*Blood Sugar in Dermatoses. F. Simon.—p. 363.
Organic Hour-Glass Stomach. E. Unger and S. Glasscheib.—p. 371.
Gastrocolonic Fistula. C. Wittkowsky.—p. 386.
Heredity in Peptic Ulcer. E. Adler.—p. 393.
*Cross Bar Symptom of Gastric Ulcer. A. Fränkel.—p. 408.
Remote Tenderness in Abdominal Diseases. M. Hirschberg.—p. 428.
*Fractional Analysis of Stomach Contents. K. Isaac-Krieger.—p. 442.
Diagnosis of Gastrocolonic Fistula. P. Kuttner.—p. 454.
Treatment of Syphilis. M. Kuttner.—p. 457.
Gastric Ulcer and the War. G. Lehmann.—p. 465.
Metabolism in Pathology. E. Mayer.—p. 469.
Protein Therapy of Ulcer. F. Schlesinger.—p. 489.
Roentgen Findings in Duodenal Ulcer. W. Teschendorf.—p. 498.
Structure of Nervous Stomach. H-P. Kuttner.—p. 508.
Pernicious Anemia. G. Kuttner.—p. 516.

Feeding by the Rectum.—Boas feels that rectal feeding has been overestimated. Only the rectal administration of large amounts of water has proved dependable. The carbohydrates added to the water are more ornamental than nourishing. Yet they make the patient feel better.

Predisposition to Ulcers.—Strauss emphasized fifteen years ago the importance of a predisposition to chronic ulcers of the stomach. Local ischemia—mechanical, from the sagging stomach, as well as spastic, may account for part of the pathogenesis.

Skin Sign in Gastric Cancer.—Brandenburg used a weak solution of potassium permanganate, in a short glass cylinder, 3 cm in diameter, pressed water-tight on the skin of the forearm. He dipped in it the negative pole of a 1 milliampere current. After five minutes, he noted about twenty or thirty brown spots when the temperature of the solution was 20-24 C. If the temperature was 40-50 C., the whole field was covered with a fine deposit. With cold water, only a few coarse spots were visible. Scratching of the skin interferes with the experiment, because the current selects the scratch line. In several cases of cancer, the picture obtained with tepid or hot water resembled that with cold water in the normal subjects. The cachectic tuberculous, and patients during chills, reacted as in the cancer cases. Pernicious anemia and myeloid leukemia reacted the opposite way. Persons with rheumatic insufficiency of the aorta responded to cold like the normal to hot water. In the course of similar experiments, he found it advantageous to apply tincture of iodine to the parts of skin from which he took electrocardiograms. It diminishes the resistance to the electric current.

Idiosyncrasies of the Eye.—Fehr calls attention to conjunctivitis caused by hypersensitiveness to various drugs applied locally. The atropine catarrh causes a swelling of the follicles, edema of the eyelids and dermatitis. The eserine catarrh is milder. Procaine is not infrequently a cause. The condition may resemble erysipelas.

Carbohydrate Cleavage in the Liver.—Wohlgemuth and Sorochowitsch found that the surviving liver tissue of pancreatectomized dogs retains for a time the ability to form acetaldehyde from various carbohydrates. Later on, this faculty disappears. Insulin does not restore it.

Electrometric Stomach Tube.—Unger describes a stomach tube provided with a small copper-zinc element. He measures with a milliamperemeter the current generated. The strength of the current depends chiefly on the acidity of the gastric juice.

Blood Sugar in Dermatoses.—Simon found in psoriasis and furunculosis a higher level of blood sugar. Hyperglycemia is common in eczema, especially in chronic cases. Insulin treatment acts favorably sometimes, especially on the itching.

Cross-Bar Symptom of Gastric Ulcer.—Fränkel makes about ten roentgen pictures of the stomach within twenty seconds, draws the outline of the shadows, and superposes them. A short line (about 8 mm.) on the lesser curvature, without any signs of peristalsis constitutes this "cross-bar (*Riegel*) symptom." It is due to the local inhibition of the transverse musculature produced by an ulcer or (rarely) by a beginning carcinoma. A large percentage of such patients suffered a perforation. He regards it as the second direct reliable sign of gastric ulcer. The first sign was Haudek's niche.

Fractional Analysis of Stomach Content.—Isaac-Krieger concludes that the fractioned aspiration of gastric contents constitutes no advantage for the clinical study of the case nor for the diagnosis.

Beiträge zur klinischen Chirurgie, Berlin

136: 1-192, 1926

*Tumors of Mediastinum. H. Braun.—p. 1.
Gastropexy. H. Schloessmann and E. Röhrig.—p. 9.
*Skin Sensibility in Umbilical Hernia. E. Stahnke.—p. 38.
Leukocytes in Surgery. M. Siebner.—p. 42.
Diagnosis of Surgical Tuberculosis. H. Friedrich.—p. 56.
*Talma's Operation. A. v. Tempsky.—p. 92.
*Bone Marrow and Regeneration. C. T. Willich.—p. 102.
"Roentgen Dosimeters." M. Jona and K. Leistner.—p. 175.
Roentgen Study of Male Urethra. H. Bronner.—p. 180.

Tumors of Mediastinum.—Braun reports two instances of removal of tumors from the posterior mediastinum. Artificial pneumothorax made on the day before the operation reduced the tendency to shock.

Skin Sensibility in Umbilical Hernia.—Stahnke found degeneration of the axis cylinder in the nerves of the skin *covering umbilical hernias. This accounts for the lowered* sensibility. If the myelin sheath degenerates, the anesthesia is complete. The degree of the changes depends on the extent and duration of the stretching of the skin.

Talma's Operation.—Tempsky reports on twenty-five cases of the Talma operation made at Küttner's clinic since 1901. A remarkable improvement followed in seven patients (28 per cent). Five in this group had hypertrophic cirrhosis, one atrophic cirrhosis and one ascites from cardiac cirrhosis.

Bone Marrow and Regeneration.—Willich concludes from his experiments with free autotransplants of bones in dogs that the endosteum and the bone marrow are just as important in bone formation as the periosteum.

Deutsche medizinische Wochenschrift, Berlin

52: 557-600 (April 2) 1926

*Latent Syphilis. W. Kolle and E. Evers.—p. 557.
*Estrual Reaction in the Blood. S. Loewe et al.—p. 559.
Atrophy of Infants. S. Engel.—p. 561.
*Degkwitz' Measles Serum. R. Kochmann.—p. 565.
Toxin-Antitoxin Immunization. H. Nothmann.—p. 566.
*Extrapleural Thoracoplasty. O. Ziegler.—p. 567.
Labor After Cesarean Section. F. C. Wille.—p. 569.
Aortalgia and Angina Pectoris. L. Frank and W. Worms.—p. 570.
Volitional Changes of Heat Radiation. I. H. Schultz.—p. 571.
Vitamins and Growth of Infants. H. Aron.—p. 572.
Vitamins in Milk. E. Edelstein.—p. 574.
Antirachitic Activation of Cholesterol and Food by Ultraviolet Irradiation. A. F. Hess.—p. 577.
Serum Phosphorus and Rickets. K. Samson.—p. 579.
Sickness Insurance. S. Alexander.—p. 580.
An American Hospital. P. Cahanowitz.—p. 582.

Latent Syphilis.—Kolle and Evers inoculated rabbits with syphilis about four weeks after an injection of a bismuth suspension. The animals developed no symptoms. If the bismuth deposit was removed two or three months later, typical chancres developed. Other animals could be infected by inoculation of an emulsion from the popliteal lymph nodes of rabbits in which the syphilis was kept latent by bismuth. Experimental transmission of syphilis succeeds apparently in only 90 per cent of the animals, and only in a small percentage in direct transmission from man. Yet the popliteal lymph nodes of such apparently resistant rabbits are infectious. In one case, the chancre became manifest after inoculation with lymph nodes from an apparently immune rabbit that had been inoculated with the nodes from another rabbit which did not react. All this shows a close parallelism between the infection of rabbits and of man.

Estrual Reaction in the Blood.—Loewe, Lange and Faure publish their method for extraction of the estrual hormone from blood, urine and other fluids. They dissolve it in oil and inject in mice. They recommend a determination of the percentage of squamous cells without nuclei in the vaginal smears.

Degkwitz' Measles Serum.—Kochmann injected Degkwitz' measles serum in nineteen children. Only six of them did not get measles—chiefly because they were probably already immune. Two of the injected children died. One of these had been injected between the seventh and the ninth day of incubation, which is considered by Degkwitz as the optimum time. Grave serum sickness developed in one third of his cases. The failure was thus complete.

Extrapleural Thoracoplasty.—Ziegler had no death in eighty-six thoracoplastic operations in uncomplicated cases. Four of seventeen patients with empyema died. He uses only local anesthesia.

52: 601-648 (April 9) 1926

Fiftieth Meeting of the German Surgical Society. A. Borchard.—p. 601.
Surgery of Exophthalmic Goiter. G. Hotz.—p. 604.
Endothelioma of the Thyroid. F. de Quervain.—p. 605.
*Treatment of Fractures. H. Matti.—p. 607.
Trigeminal Neuralgia. P. Clairmont.—p. 609.
*Nil Nocere. O. Lanz.—p. 611.
Bolt in Treatment of Fracture of Neck of Femur. C. F. A. Koch.—p. 612.
Treatment of Bronchiectasis. J. H. Zaaijer.—p. 614.
*Multilocular Cysts of the Kidney. T. Rovsing.—p. 614.
Statistics on Tuberculosis of the Kidney. G. Ekehorn.—p. 615.
Iodine in Exophthalmic Goiter. J. Nicolaysen.—p. 616.
Retroperitoneal Lipomas. A. Krogius.—p. 618.
Surgery in Hematemesis. E. Hesse.—p. 620.
Technic for Radon Treatment. Petrow and Kusmina.—p. 622.
Surgery of Peptic Ulcers. Orhan Bey.—p. 624.
Prevertebral Fibrosarcomas. v. Verebély.—p. 626.
*Contracture of Hip. A. Stanischeff.—p. 628.
Treatment of Peritonitis. L. Cardenal.—p. 630.
Surgery of Nephrolithiasis. P. Cifuentes.—p. 632.
Technic for Artificial Anus. C. Cabeça.—p. 635.
Strengthening Debilitated Patients. G. W. Crile.—p. 636.
Brain Tumors. W. E. Dandy.—p. 638.
Congenital Arteriovenous Fistulas. D. Lewis.—p. 639.
Twilight Zone in Medicine. W. J. Mayo.—p. 642.
Spinal Anesthesia. J. Arce.—p. 644. Idem. J. Izquierdo.—p. 646.
History of Syphilis. K. Dohi.—p. 646.

Treatment of Fractures.—Matti deals with some of the present problems in surgery of fractures. He warns emphatically against mobilization and exact reposition of impacted fractures of the neck of the femur in the elderly. He rates the danger from direct extension of the bone higher than that from open reconstruction of the bone. Many mishaps of osteosynthesis methods are due to the use of catgut instead of silk.

Nil Nocere and the Tunica Vaginalis as Test Object.—Lanz tests first the fluids to be injected into the cerebrospinal canal, as well as into the ureters, on the tunica vaginalis propria in patients with hydrocele. Some of the local anesthetics gave no reaction. Colloidal silver caused, in one instance, a grave necrosis and inflammation of the tunica. He prohibited its use in pyelography, and the sad experience since of other clinicians showed that he was right. Sodium bromide (25 per cent) is less irritating than 12.5 per cent sodium iodide.

Multilocular Cysts of the Kidney.—Rovsing cured three patients with polycystic kidneys by multiple punctures of the cysts. No fistulas formed. This might have been expected since the cysts contain no urea.

Contracture of the Hip.—Stanischeff corrects the shortening of the femur in contractures of the hip joint by a pertrochanter osteotomy, cutting the femur through both trochanters and sliding the lower cut surface on the upper to lengthen the femur, concluding with extension by a wire passed through the bone. No plaster. Six illustrations show the technic.

Jahrbuch für Kinderheilkunde, Berlin

112: 1-110 (March) 1926

*Splenomegaly with Lipoid Cells. E. Schiff.—p. 1.
*Formation of Casts. A. Feuchtwanger and M. Lederer.—p. 7.
Experimental Rickets. P. György and G. Popoviciu.—p. 22.
*Idem. P. György et al.—p. 35.
Treatment of Erythrodermia. Z. v. Barabás.—p. 44.
Blood Platelets in the New-Born. H. v. Farnos.—p. 47.
Cervical Osteomyelitis. F. Basch.—p. 51.
*Hemoglobin Resistance. H. Bischoff and H. Schulte.—p. 56.
Treatment of Syphilis in Infants. E. Pese.—p. 62.
*Etiology of Scarlet Fever. H. Deicher.—p. 74.

Splenomegaly with Lipoid Cells.—Schiff reports the *first* case of splenohepatomegaly of the Niemann-Pick type diagnosed in the living. The patient was an infant, aged 17 months, and the parents had noticed enlargement of the abdomen from the age of 3 months. The blood picture was about normal, but the serum was pseudochylous. The complexion was pale brownish The enlargement of the liver was more pronounced than in Gaucher's splenomegaly. Puncture of the spleen revealed typical large cells containing fat and lipoids, as described by L. Pick. This decided the diagnosis.

Formation of Casts.—Feuchtwanger and Lederer regard acidosis as the most important factor in the formation of urinary casts in infants Acidosis also increases the amount of urinary colloids, which furnish the material for the casts. They were able to induce albuminuria and cylindruria by administering calcium chloride.

Experimental Rickets.—Gyorgy, Jenke and Popoviciu found that nonirradiated cholesterol and its derivatives have no antirachitic properties Irradiated cholesterol and its ester are active Cholestanols and choleic acid are hydrated products and cannot be activated by irradiation They suggest the possibility of oxidation by the action of light at the point of double binding

Hemoglobin Resistance.—Bischoff and Schulte conclude from the curves of destruction of hemoglobin that infants have two hemoglobins one from the fetal life, which is more resistant, and another, which is formed after birth.

Etiology of Scarlet Fever.—Deicher confirms completely the American work on the etiology of scarlet fever. Not every streptococcus obtained from scarlet fever produces a good toxin He believes that it may be possible to identify these strains better by agglutination tests Streptococci from other sources and some of the streptococci from scarlet fever patients produce other toxins, which are not specific. While a convalescent from scarlet fever has a negative Dick test as a rule, he will react to these nonspecific toxins. A convalescent child with a positive Dick test again became ill shortly afterward with scarlet fever He rates the reliability of a negative Dick test at 98 per cent The failures are partly due to changes in the susceptibility in the same individual.

Klinische Wochenschrift, Berlin

5: 633 680 (April 9) 1926

Fiftieth German Surgical Congress V. Schmieden —p. 633.
Hour Glass Tumors of the Spine M Borchardt.—p. 636.
*Lipoid Theory of Anesthesia H Winterstein —p 642.
*Niche in Cancer K Presser —p 644
Surgery for Kidney Stones M Zondek —p 646
Paralysis of Opponens Muscle S Weil.—p 650.
*Pain Conduction in Vessel Nerves L Hirsch —p. 651.
Sport Injuries W Baetzner —p 653
*Heart Hormone L Haberlandt —p 654
*Lipoid Antibodies R Brandt et al —p 655.
Duodenal Diverticulum Rave —p 655
Pneumococcus Peritonitis W Budde —p 657.
Surgery of Colitis Klose —p 659
Distribution of Physicians in the United States K Freudenberg —p 662.
Change of Sex P Hertwig —p 663
*Gas Metabolism H W Knipping —p 677.

Lipoid Theory of Anesthesia.—Winterstein surveys the evidence against the lipoid theory of anesthesia It is impossible to judge from the solubility in oil as to the solubility in the lipoids of organs The cause of the—not very close—parallelism between the narcotic power and the coefficient of distribution between oil and water is simply the fact that a less water-soluble substance will adhere better to the water-insoluble surface of the cell. Warburg's experiments with shaking of aqueous solutions of narcotics with charcoal gave similar results as shaking with oil. Yet nobody would base on that a "charcoal theory" of anesthesia

Niche in Cancer.—If the niche is larger than a cherry stone, Presser regards cancer as probable.

Pain Conduction in Vessel Nerves.—Hirsch found spinal sensory fibers in the arteries of the extremities.

Heart Hormone.—Haberlandt was able to extract from the heart an alcohol-soluble substance that induced contractions in the frog heart which had been standing still It also accelerated and increased the pulsation

Lipoid Antibodies.—Brandt, Guth and Muller injected rabbits with mixtures of hog serum with lipoids from various sources They found indications of organ specificity, especially with lipoids extracted from brain tissue.

Gas Metabolism.—Knipping fears that the determination of gas metabolism may take the same development in Germany as it did in the United States. He tries to convince practitioners that it rarely pays to acquire such an apparatus and to learn how to handle it. He sees another danger in the production of too simple types of apparatus, as he attributes to America Against this danger he had devised an apparatus which is practically identical with the simplest registering types used commonly in the United States.

Medizinische Klinik, Berlin

22: 559 598 (April 9) 1926

Myxedema of Adults H Curschmann —p. 559
Monocytes from Trialistic Standpoint V Schilling —p 563.
Occupational Diseases of Physicians J Löwy —p 567. C'td.
*Vagus or Carotid Pressure Experiment? N. Ortner —p 570
Chronic Arthritis F. Munk —p 571
*Virus of Encephalitis and Herpes H. Pette.—p. 573.
*Psychology of Angioneurotic Edema. I. H. Schultz —p 576
Endotoxin Poisoning by Typhoid Vaccine E Hoke —p 577.
*Models of Enzymes H. Haehn —p 577.
Problems of Virus Research R Kraus —p 579 C'cn
Arteriosclerosis and Cirrhosis as Occupational Injury v. Schnizer —p 581
Resorption of Cinchophen by Skin Horsters and Rothmann —p 582.
Insulin Treatment of Nondiabetics H Bernhardt —p. 585
Pharmacology of the Kidneys E. Hesse —p 588

Vagus or Carotid Pressure Experiment?—Ortner observed an almost immediate bradycardia (after two to four pulses) on compression of one or both femoral arteries in arteriosclerosis

Virus of Encephalitis and Herpes.—Pette finds no definite reasons for assuming the identity of the virus of epidemic encephalitis and of febrile herpes.

Psychology of Angioneurotic Edema.—Schultz' patient was a man dissatisfied with his wife but faithful to her. He had the habit of taking off each night the wedding ring he wore. On the morning after the departure of his wife for a three weeks' absence, he developed an angioneurotic edema of the ring finger, which made it impossible to replace the ring. The edema disappeared when the wife returned.

Models of Enzymes.—Haehn publishes two models of enzymes. One of them is a combination of chlorides of potassium, sodium and calcium with alanin, l leucin and eventually a peptone It has the action of an amylase The other is a mixture of phosphates with a p_H of 7.1 with addition of glycocoll It oxidizes acetaldehyd and propionaldehyd in the presence of methylene blue, thus resembling Schardinger's milk enzyme (an oxido-reductase).

Münchener medizinische Wochenschrift, Munich

73: 639 690 (April 16) 1926

Psychotechnics and Medicine Poppelreuter —p 639
*Roentgenotherapy in Neuralgia F. K Walter and F Lax —p 643.
Epidemic Encephalitis in China M Pfister.—p 645 C'td
Rhythmic Faradization R Geigel —p 647
Hypotonic Syndrome. G Joachim —p 648
*The Kielland Forceps E Frey —p. 649.
Apparatus for Pleura Puncture W. Weitz —p 650
*Raw Sauerkraut in Medicine A Hartmann —p 651
Damm's Gonorrhea Test V Pflanz.—p 653
Telegonia D v Waldeyer Hartz —p 654.
Goiter Surgery H Doerfler —p 655
The Physician and Agricultural Reform. H. Krauss —p 658 C'td.
History of Medicine F Lejeune —p 660

Roentgenotherapy in Trigeminal Neuralgia.—Walter and Lax are astonished that the roentgen rays are so rarely used in treatment of neuralgia of the trifacial nerve They report nineteen cured by it among twenty-nine cases, six considerably and two distinctly improved The first exposure frequently causes an exacerbation of the pains The technic seems to play a great part in the success.

The Kielland Forceps.—Frey recommends the Kielland forceps for practitioners, but adheres strictly to the old indications in its use.

Raw Sauerkraut in Medicine.—Hartmann extols the advantages of raw sauerkraut. It has a high vitamin content, influences the intestinal flora, and is a household remedy in ascaridiasis.

Wiener klinische Wochenschrift, Vienna

39: 437-464 (April 15) 1926

The Coronary Circulation. R. Kaufmann.—p. 437. C'td.
*Hypoglycemia After Denervation of the Pancreatic Artery. K. Doppler and K. Steinmetzer.—p. 441.
*Pharmacology of Caffeine. M. Grossmann and K. Lušicky.—p. 442.
Liver Function Tests with Dyes. R. Bauer.—p. 444.
Psychiatric Histories. K. Grosz.—p. 446.
Mucosa in Skin Diseases. S. R. Brünauer.—p. 447. C'cn.
Sanatoriums and Tuberculosis. E. Ladeck.—p. 449. C'cn.
Difficult Extractions of Teeth. H. Wolf.—p. 450.
Abdominal Tumors. H. Steindl. Supplement.—p. 1-18.

Hypoglycemia After Denervation of the Pancreatic Artery.—Doppler and Steinmetzer applied an 8 per cent aqueous solution of phenol to the arteries of the pancreas in dogs and rabbits. The blood sugar began to decline in about seventeen days, and reached its minimum (17 to 52 per cent below normal) after twenty-five to forty-seven days more. Then it rose again and eventually declined—probably because of the interaction of the suprarenals.

Pharmacology of Caffeine.—Grossmann and Lušicky found no clinical influence from the double salts of caffeine on the circulation nor on the central nervous system. A real action could be obtained only with pure caffeine or with black coffee.

Zeitschrift für Kinderheilkunde, Berlin

41: 1-260 (April 13) 1926

*Action of Heat on Infants. F. Demuth et al.—p. 1.
*Signs of Birth Injury of Brain. A. Dollinger.—p. 20.
Persistence of Fetal Heart Conduction. L. Doxiades.—p. 24.
*Blood Chemistry of Scurvy. E. Edelstein and S. Schmal.—p. 30.
*Treatment of Epilepsy. E. Freudenberg.—p. 46.
Clinical Study of Rickets. M. Klotz.—p. 51.
Exophthalmos, Obesity and Insipidus in Girl. R. Kyrklund.—p. 56.
Superinfection in Tuberculosis. H. Langer.—p. 63.
Microsedimentation Test. H. Langer and W. Schmidt.—p. 72.
Hepatic Infantilism. M. Pfaundler.—p. 78.
Untrainable Children. C. Pototzky.—p. 88.
*Toxic or Dynamic Protein Fever? A. Reiche.—p. 96.
*Leukocytes in Infants. S. Schmal et al.—p. 102.
*Leukocytes in Sick Infants. S. Schmal et al.—p. 128.
*Environment and Growth of Rats. H. Vollmer.—p. 205.
*Metabolism in Pylorospasm. H. Vollmer and J. Serebrijski.—p. 209.
Eggs to Combat Diarrhea in Infants. A. Ylppö.—p. 240.
Addition of Proteins and Pepsin Secretion. M. Comberg.—p. 249.
Adenoma of Pylorus. F. Demuth.—p. 252.
Prognosis of Congenital Renal Tumors. J. Sommer.—p. 256.

Action of Heat on Infants.—Demuth, Edelstein and Putzig kept six infants for three or four weeks in a warm room (84-89 F.). An acidotic shifting of the metabolism was the most striking change produced.

Signs of Birth Injury of Brain.—Dollinger attributes various motor irritation phenomena in infants (nystagmus, contractions of facial muscles) to cerebral injury suffered at birth.

Blood Chemistry of Scurvy.—Edelstein and Schmal found practically no changes in the dextrose and calcium concentration of the blood in guinea-pigs with experimental scurvy. The phosphates were lower in some of them, normal in others.

Treatment of Epilepsy.—Freudenberg's patient had no seizures when the sodium chloride concentration of his blood serum was below 0.5 per cent. He used a diet poor in salt and daily administration of 9 Gm. of sodium bicarbonate plus 1 Gm. of potassium bicarbonate to keep the blood chloride low.

Toxic or Dynamic Protein Fever?—Reiche found that even large amounts of proteins do not induce fever in infants, if administered with breast milk. He concludes that protein fever is of toxic, rather than of dynamic origin. It may be due to decomposition products, which can be neutralized by human milk.

Leukocytes in Infants.—Schmal, Schmidt and Serebrijski publish a detailed study on the leukocytes in normal and sick infants and children.

Environment and Growth of Rats.—Vollmer found that inhibition of movements, small cages and dirt slow down the growth of young rats. Daylight or darkness had no influence, but sensitization with eosin before exposure to light promoted the growth.

Metabolism in Pylorospasm.—Vollmer and Serebrijski investigated the metabolism in infants with pylorospasm. They found no signs of hyperirritability of the nerves, and they propound the question, why these patients have no spasmophilia. Another problem is that of a possible vicious circle: The vomiting entails alkalosis; the latter causes vagotonia, and this in turn may increase the irritability of the pylorus. The ammonia excretion was low—and absent in the two gravest cases. The ratio of basic (secondary) phosphates to the acid phosphates was always greater than that of the blood (¼). This alkalinuria persists even after the vomiting has ceased. Only large doses of hydrochloric acid are able to correct this alkalinuria, and this not always. Hypercapnia—up to 114 volume per cent carbon dioxide—was constant. The hydrogen ion concentration of the blood was low in every grave case (p_H up to 7.51). The blood chlorides were low and the urine chlorides still lower. The calcium, potassium and phosphates of the blood were about normal. The hypoglycemia was probably due to alkalosis. They tested with dimethylamidoazobenzene how much hydrochloric acid could be added to the milk. Addition of 4 per cent of normal hydrochloric acid to breast milk, or 6 per cent, if some proteins are added, changes the color of the indicator. The taste of such milk is agreeably acid. It is quite helpful, although it does not restore normal conditions at once. They believe that the low blood chlorine, together with the low residual nitrogen account for the absence of symptoms of tetany in these infants. Many other problems are still waiting for solution; for instance, the peculiar predisposition of boys for pylorospasm.

Zeitschrift für Krebsforschung, Berlin

23: 89-159 (March 20) 1926

*Color Test for Cancer. A. H. Roffo.—p. 89.
Influence of Arsenic on Cancer. W. Schuller.—p. 99.
*Biochemical Reactions with Cancer. O. Boyksen.—p. 110.
Alleged Increase in Pulmonary Cancer. R. Breckwoldt.—p. 128.
Treatment of Cancer. H. Auler.—p. 153.
Origin of Cancer. E. Kliment.—p. 157.

Neutral Red Serologic Test for Cancer.—Roffo's test has been described in these columns recently. It is made with 5 drops of a 0.01 per cent solution of neutral red added to 2 cc. of clear serum. Normal serum turns it a yellowish tint. He calls attention anew to the simplicity of the test, the constantly negative findings in nonmalignant disease, and the 100 per cent positive responses with internal cancer.

Biochemical Reactions with Cancer.—Boyksen reports experimental and clinical inoculations with cancer autolysates, and experiences with the serum from animals thus treated.

Zeitschrift f. d. ges. Neurologie u. Psychiatrie, Berlin

100: 481-795 (Jan. 30) 1926. Partial Index

Correlations Between Physical and Mental Type. Ssucharewa and Ossipowa.—p. 489.
*Periodic Paralysis of the Extremities. T. Shinosaki.—p. 564.
Can Organic Disturbances Be Influenced by Suggestion, Hypnosis and Hypnosis During Effect of a Narcotic? Dattner and John.—p. 639.
The Dogma of the Incurability of Dementia Praecox. Morgenthaler.—p. 668.
*The Neuroglia in General Paralysis. S. R. Cajal.—p. 738.

Periodic Paralysis.—Shinosaki has encountered in Japan twenty-four cases of periodic paralysis of the extremities; in 62 per cent there was goiter, including 29 per cent of the exophthalmic type. He found that by giving the patients thyroid or parathyroid preparations he was able to bring on a paroxysm of the paralysis. An epinephrine injection in fifteen cases elicited the paroxysm of paralysis in 15 per cent; in one in this group, besides the paralysis, ventricular extrasystoles appeared, the same as in the spontaneous attacks. In only one case was there glycosuria during the intervals, but three other cases had glycosuria during the paroxysms of paralysis, and 73 per cent of the total had albuminuria during the attacks. In a number of the patients the oculocardiac reflex was pronounced. A family or hereditary tendency is not so constant as others have assumed. Charcot's "Basedow paraplegia" was probably a periodic paralysis occurring in exophthalmic goiter. The necropsy findings in the one case examined were of the exophthalmic goiter type, with hypertrophy of the parathyroids. All the data testify to a polyglandular affection, the thyroid predominantly involved. The clinical picture is exactly the reverse of tetany, and the attacks are liable to be brought on by repose, and by overintake of carbohydrates; the latter may exaggerate parathyroid functioning. The first attack was noted at the age of 54 in one patient, but the majority were in the twenties; none was under 16.

The Necropsy Findings in General Paralysis.—Cajal discusses the technic for silver impregnation of pathologic nerve tissue, and the interpretation of the findings in the brain in general paralysis. He confirms the quantitative increase of the macroglia, and the transformation of the protoplasmic glia of the gray substance into fibrous glia. Areas are found in both the cerebrum and cerebellum in which the vascular lesions are pronounced while the nerve cells and fibers show little change, while in other areas exactly the reverse prevails.

Zentralblatt für Gynäkologie, Leipzig

50: 977-1040 (April 10) 1926

*Blood Sugar in Mother and Fetus. T. Révész and M. Turolt.—p. 985.
Pertubation. M. v. Scheller.—p. 990.
Oligohydramnios. K. Vorlaender.—p. 998.
*Habitual Abortion. J. Novak.—p. 1003.
Missed Labor. L. Stolper.—p. 1008.
Primary Abdominal Pregnancy. V. Waehneldt.—p. 1019.
Laceration of Tentorium in Cesarean Section. B. Tunis.—p. 1029.
"Medical Publications." T. Johannsen.—p. 1033.
Intraperitoneal Hemorrhage with Chorionepithelioma. W. L. Butomo. —p. 1034.

Blood Sugar in Mother and Fetus.—Révész and Turolt found less sugar in the blood from the umbilical artery than from the vein, and less in the latter than in the mother's blood.

Habitual Abortion.—Novak had good results with Lomer's treatment of habitual abortion. He gave small doses of iodides (20-10 drops of a 1 per cent solution of potassium iodide) and two Blaud's pills daily during the pregnancy. It helped in four, evidently nonsyphilitic cases.

Prophylaktitcheskaia Medicina, Kharkov

5: 1-176 (March) 1926. Partial Index

*The Hemolytic Scarlet Fever Streptococcus. N. Kniazeff and L. Alexandrova-Portniagina.—p. 10.
Occupational Injury from Dust. F. Prinzing.—p. 115.

Hemolytic Properties of Scarlet Fever Streptococci.—Kniazeff and Alexandrova-Portniagina found hemolytic streptococci in the throat of about 50 per cent of scarlet fever patients; in the cerebrospinal fluid and blood of 3 per cent of patients with a grave form of scarlet fever, and always in the blood of cadavers. At the onset of the disease the hemolytic streptococci were much more frequent in the severe form than in the mild, or in convalescents. Hemolytic streptococci were detected in about 7 per cent of healthy children (from 18 months to 14 years old), in none of eight cases of other infectious diseases, and in 10 per cent of persons in contact with scarlet fever patients. Within the first days of the disease, all the streptococcus colonies displayed a hemolytic property, but lost it gradually. The hemolytic power of the streptococci disappeared completely by the fourth week of the disease. On the other hand, the number of nonhemolytic strains increased correspondingly. In artificial nutrient mediums, the streptococcus seemed to conserve its vitality and hemolytic potency for four months. The associated microbes did not seem to influence the hemolytic property of the scarlet fever streptococcus. Changes of hemolysis were noted in bouillon cultures of the streptococci after blood from scarlet fever patients had been added.

Acta Medica Scandinavica, Stockholm

63: 301-424 (April 14) 1926

*Air Embolism in Pneumothorax. A. F. Lindblom.—p. 301.
Acidosis. G. Becker.—p. 313.
Blood in Chronic Endocarditis. O. Ottander.—p. 336.
Hallucinations in Hemianopia. A. Grönberg.—p. 355.
*Nitrites in the Urine. E. B. Salén.—p. 369.

Air Embolism in Pneumothorax.—Lindblom's patient died from air embolism a few seconds after the introduction of a closed needle. The instrument had pierced a small vein, and the air had been driven into it by a cough.

Nitrites in the Urine.—Salén confirms the occurrence of nitrites in the fresh urine in the presence of certain germs, especially the colon bacillus, in the urinary tract. Yet he doubts the value of the test except for preliminary orientation. The nitrites may cause a positive guaiac test even without addition of peroxide.

Norsk Magazin for Lægevidenskaben, Oslo

87: 257-352 (April) 1926

*Ovarian Endometriosis. C. Semb.—p. 257.
*Alkali Treatment for Nonhealing Fractures. E. Platou.—p. 287.
Extract of Lung Tissue in Therapeutics. Mentz von Krogh.—p. 294.
*Fracture of Cervical Vertebra. K. Haugseth.—p. 298.
Dietetic Treatment of Diabetes. H. C. Geelmuyden.—p. 300.

Heterotopic Endometrial Implants.—Semb comments on the great variety of organs in which this endometriosis develops. The adenomyomas containing tissue resembling uterine mucosa do not fit into any known class of tumors. They represent actual endometrium outside of the uterus, and behave as such. He found them in 5.5 per cent of 126 ovarian tumors, corresponding to 10 per cent of the benign cystic tumors of the ovary examined. In six other cases, they were found on the intestine, exterior of the uterus, ligaments or tubes. He tabulates the findings in the seven ovarian cases. Extensive formation of bands and adhesion to the peritoneum was constant, evidently secondary, testifying with other findings to an exceptionally irritating action from the contents of these cysts, all of the tar-cyst type. No other cause for the adhesions could be detected. In one virgin, they filled the entire small pelvis. The clinical picture in all was that of chronic pelvic peritonitis. Only two of the women were married. Nothing indicated malignancy in these cases.

Alkali Treatment of Pseudarthrosis.—Scarcely a trace of callus formation was evident even by the sixth month after the fracture, although the conditions had been ideal for consolidation. Platou then gave the man sodium bicarbonate as if he had diabetes. In two months, consolidation was complete. This treatment was suggested by Frølich's success in the opposite line, curing a boy with a grave case of ossifying myositis by inducing acidosis. It is a common experience that fractures do not heal well in diabetics with acidosis.

Fracture and Dislocation of Cervical Vertebra.—In Haugseth's case, laminectomy cured the grave spastic paralysis after fracture of the fifth vertebra with dislocation of the fourth.

Ugeskrift for Læger, Copenhagen

88: *287-310 (March 25) 1926*

*Diastase in the Urine. J. Fabricius-Møller.—p. 287.
Metal Salts in Therapeutics. L. E. Walbum.—p. 298. C'cn.
Extraction of Teeth in General Anesthesia. M. Melchior.—p. 303.

Diastase in the Urine.—Fabricius-Møller found unusual amounts of diastase in the urine in twenty-three cases of tenderness in the region of the pancreas. In eight of the cases, disease of the pancreas was confirmed by operation or necropsy. In seven there was mild pancreatitis or merely compression from a gallstone, and the diastase and the tenderness disappeared after the jaundice had subsided or the gallstone been passed in the stools, or both. The diastase content ranged from 250 to 16,000 units in this group. In three other cases the diastase content ranged from 200 to 1,000 after subsidence of a mild pancreatitis under medical measures alone. In another case of 500 diastase units, there was a juxtapyloric ulcer; in another with 250 there was jaundice from gallstones or cancer metastasis, and in one with 300, cholecystitis was beyond question. In this last group of eight cases, pancreas disease was not certain but it was equally difficult to affirm that the pancreas was sound. Clure and Pratt regard up to 500 as the physiologic range, while others accept 120-150 as the upper limit. In twenty-four cases of gallstone jaundice with no signs of injury of the pancreas, the diastase was within the normal range. In only three of 200 persons with surgical affections not involving the pancreas was the diastase between 120 and 150; all the others were below this figure. He has simplified the usual test for diastase and emphasizes the instructive response in acute abdominal affections. The findings may be misleading after ether anesthesia.

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USE OF INJECTED IODIZED OIL IN ROENTGEN-RAY DIAGNOSIS

OF LARYNGEAL, TRACHEAL AND BRONCHOPULMONARY CONDITIONS *

SAMUEL IGLAUER, M.D.
CINCINNATI

The introduction of a contrast substance into the bronchial tree as an aid to roentgenographic diagnosis was first practiced by Jackson.[1] For the purpose of lung mapping he employed dry bismuth subcarbonate, which was insufflated through a bronchoscope.

In 1918, Stewart and the late Dr. Lynah[2] demonstrated excellent roentgenograms of pulmonary abscesses and bronchiectatic cavities which had been filled with an emulsion of bismuth in olive oil.

The endobronchial injection of lipiodol, an iodized vegetable oil containing 40 per cent of iodine by weight, was first practiced by Sicard and Forestier[3] after they had successfully employed it in the spinal canal and other body cavities. The oil and iodine are firmly bound and, owing to its marked radiopacity and nonirritating qualities, lipiodol has proved to be an excellent medium for bronchography.

Forestier and Leroux,[4] Sergent and Cottenot[5] and others repeated the experiments with gratifying results. It was soon discovered that, since the oil gravitated into the most dependent portion of the lung, the course of its flow could be directed by changing the position of the patient.

Delille,[6] who confined his work to children, detected a series of cases of bronchiectasis in patients who had been confined in a sanatorium under the mistaken diagnosis of tuberculosis.

The French school, in general, employs two methods of introducing the oil. The first consists in anesthetizing the larynx (and trachea) and then injecting lipiodol with a laryngeal syringe, provided with a long cannula, introduced above or below the glottis. In the second method a small curved trocar and cannula is thrust through the cricothyroid membrane into the trachea, and a diluted procaine solution is then injected through the cannula to check the cough reflex, after which the iodized oil is also introduced through the cannula

In 1925, Clerf,[7] as well as Ballon,[8] injected the oil through a long cannula inserted through a bronchoscope.

Recently, Beck and Sgalitzer[9] of Vienna employed a retention catheter introduced through the larynx, and directed the flow of the oil by placing the patient before the fluoroscope while the oil was being injected.

Haslinger[10] employs a specially devised bronchus tube, which is guided into the bronchus under fluoroscopic control.

Nather[11] describes an original method. After cocainization of the larynx and hypopharynx, the patient is instructed to swallow the oil. According to Nather, in a majority of instances the fluid will be swallowed the wrong way; i. e., into the trachea.

The German preparation of iodized oil is marketed under the name of "iodipin" (40 per cent), while the Danish product is designated "iodumbrin"[12] and is said to be more opaque than lipiodol. I have used both iodipin and lipiodol and can note no marked difference either in their local action or in their opacity. In order to avoid any possible chance of iodism, Dyroff[13] has just reported the use of a new preparation, "contrastol," in which bromine has been substituted for the iodine radical. Unlike iodized oils, "contrastol" is readily sterilized by boiling.

VARIOUS INJECTION METHODS

The introduction of iodized oil is a laryngologic problem. The use of the laryngeal syringe requires

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* Chiefly from the laryngologic and roentgenologic departments of the Cincinnati General Hospital.

* Chairman's address, read before the *Section on Laryngology, Otology and Rhinology* at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Jackson, Chevalie[illegible] Diseases of the Trachea and Bronchi (T[illegible] and Gastroscopy, 1907, p. 69); Th[illegible] Insufflation of Opaque Substances in the Living, Am. J. Roentgenol. **5**: 454-455 (Oct.) 1918.

[2] Lynah, H., and Stewart, W.: Roentgenographic Studies of Bronchiectasis and Lung Abscess After Direct Injection of Bismuth Mixture Through the Bronchoscope, Am. J. Roentgenol. **8**: 49-59 (Feb.) 1921.

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[4] Forestier, J., and Leroux, L.: Etude expérimentelle radiologique des injections intratracheales par l'huile iodée injections lobaire, Bull. et mém. Soc. méd. d. Hôp. de Paris **47**: 299 (Jan. 23) 1923.

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[6] [illegible] Duhamel, [illegible] e diagnostique [illegible] chez enfants au moyen du lipiodol, Presse méd. [illegible] Armand-Dellille, P. F.: Bull. et mém. Soc. méd. d. hôp. de Paris **47**: 1619 (Dec. 30) 1923. Armand-Delille, P. F., and Gelston, C. F.: Diagnosis of Dilatation of Bronchi in Children by Means of Injection of Iodinized Oil, Am. J. Dis. Child. **28**: 527 (Nov.) 1924.

[7] Clerf, L. H.: Pneumonography, Surg., Gynec. & Obst. **41**: 722-727 (Dec.) 1925.

[8] Ballon, D. H.: The Injection of Lipiodol as an Aid in the X-Ray Diagnosis of Bronchopulmonary Lesions, Including Tuberculosis, Canad. M. A. J. **15**: 995-999 (Oct.) 1925.

[9] Beck, O., and Sgalitzer, M.: Zur Bronchographie mittels Larynx-Katheters, Ztschr. f. Hals-, Nasen- u. Ohrenh. **14**: 8 (Jan. 26) 1926; Ztschr. f. Chir. **52**: 1537-1541 (July 11) 1925.

[10] Haslinger, F.: Discussion, Munchen. med. Wchnschr., April 9, 1925, p. 422.

[11] Nather, K.: Zur Technik der Bronchographie (Verschluck Methode), Deutsche Ztschr. f. Chir. **188**: 1534-1537 (July 11) 1925.

[12] Moeller, P. F., and von Magnus, R.: *Investigation of Bronchial* Affections by Means of Iodine Preparations (Iodumbrin and Lipiodol), Acta med. Scandinav. **63**: 174.

[13] Dyroff, R.: "Contrastol," ein neuer Kontrast *Mittel fur die Darstellung Engkalibrigen Hohlraume,* Deutsche med. Wchnschr. **52**: 397 (March 5) 1926.

considerable training and is rather difficult if the patient's body is inclined at an angle in order to inject some particular region of the lung.

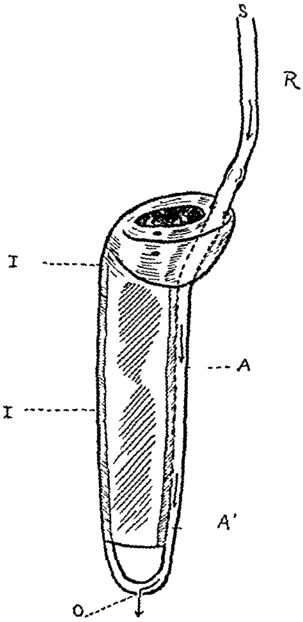

Fig 1.—Double barreled intubation cannula, with large channel for breathing and smaller channel for injecting oil *I I'*, air channel; *A A'* oil cannula, *O*, outlet for oil cannula, *R*, rubber tubing, *S*, syringe attachment, arrows indicate direction of oil flow

Puncture through the cricothyroid membrane gives a direct approach, but the trachea may be missed and the oil may be injected into the peritracheal tissues. I have witnessed two cases in which this accident occurred in expert hands. The occurrence of interstitial emphysema and slight hemorrhage has also been reported.

The bronchosopic method is undoubtedly the most certain and offers the additional advantage of permitting direct inspection and removal of specimens. The bronchoscope, however, cannot be generally employed because the patient may object to its use and because of the special training required for its manipulation.

The catheter method is simple and permits of easy injection under fluoroscopic control. However, it requires considerable cooperation on the part of the patient, who must hold the catheter fixed between his teeth. Its use is obviously not very practicable in children.

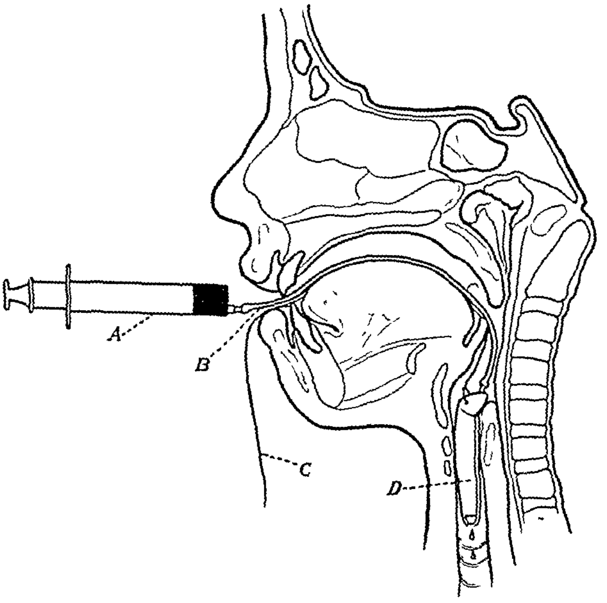

Fig 2.—Intubation cannula in situ: *A*, syringe containing oil, *B*, rubber tubing; *C*, extracting string, *D*, intubation cannula.

The swallowing method is uncertain and involves the problem of oral sepsis.

My own work has been carried on chiefly with the bronchoscope and with the use of a special intubation tube which I have devised for this purpose.

Intubation Method.—Intubation Cannula: The instrument consists of a shortened metal O'Dwyer tube with a longitudinal groove cut in the back wall into which a small bore secondary cannula is soldered. The accessory cannula (designed to convey the oil) is somewhat longer than the O'Dwyer tube and terminates above in a nipple, over which a long piece of rubber tubing is slipped. Below, the secondary cannula extends in a semicircular prolongation beyond the O'Dwyer tube, to insure the entrance of the oil into the trachea (fig. 1). The semicircular extension facilitates the introduction of the intubation cannula. When inserted into the larynx, the double barreled arrangement provides one channel for the injection of the oil while the main channel remains unobstructed for breathing purposes.

Technic: In order to obtund the cough reflex, a preliminary dose of codeine or morphine is administered. In the adult, the larynx is anesthetized with a 10 to 20 per cent solution of cocaine. In young children, this is omitted. A long piece of rubber tubing is attached to the oil cannula, and the intubation tube is threaded in the usual manner for safety and extraction. The intubation tube, carried on an obturator, is then introduced into the larynx under the guidance of the laryngoscopic mirror. In young children it is inserted by touch. Through the rubber tube which projects from the patient's mouth, a small quantity of cocaine solution (2 per cent) or procaine (3 per cent) is injected into the trachea to abolish the cough reflex.

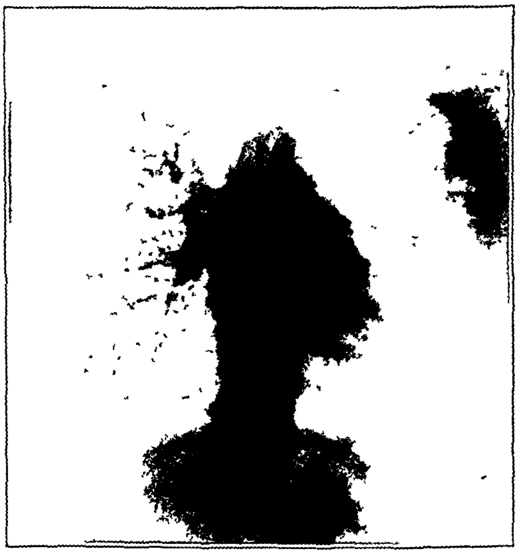

Fig. 3.—Pulmonary tuberculosis involving the right lung: Trachea slightly deflected to the right; lung injected with the patient lying on the right side, the right tracheobronchial tree is filled with the exception of the infiltrated apex, which the oil could not penetrate.

In the roentgen-ray room, a glass syringe containing warm iodized oil is attached to the rubber tube through which the oil is slowly injected into the trachea (fig. 2). Should the patient cough, the intubation tube acts as a baffle and tends to prevent the escape of the oil into the pharynx. By varying the position of the patient, one causes the oil to gravitate into any desired portion of the lung. If the patient is placed on his side, the dependent lung may be injected throughout (fig. 3). It is often advantageous to control the direction of flow by placing the patient before the fluoroscope while the oil is being injected. Since the oil may diffuse rapidly or be expectorated with the return of the cough reflex, the roentgenogram should be taken immediately after the injection. From 15 to 20 cc. will usually suffice for visualizing one lung. As much as 40 cc. of oil may be introduced. Both bases or one lung may be filled at one time, but it is not advisable to fill entirely both lungs at one sitting.

The intubation tube is withdrawn by traction either before or after the picture is taken.

Advantages: The advantages of the intubation method lie in its comparative simplicity and its applicability to all ages. Little cooperation is necessary on the part of the patient, who is free to move about and can be comfortably placed in any desired position. Fluoroscopic control of the injection may be readily employed, while the baffle action of the tube tends to prevent the escape of the oil from the trachea.

ROENTGENOGRAPHY

The roentgenography in connection with this paper was carried out by Drs. George Benzing and Samuel Brown. The films were taken in either the upright or the recumbent posture. The best films were obtained when the patient held his breath at the end of a deep inspiration. Stereoscopic films were made whenever possible, and lateral views were also found to be of value.

Normal.—The normal tracheobronchial tree is beautifully delineated after injection. The trachea in the midline of the body stands out clearly, and occasionally the outlines of individual rings are clearly visible. The carina and main bronchi are readily located, and the tapering arborescent structure of the bronchi give a very striking picture. The alveoli are frequently filled as far as the peripheral pleura (fig. 4).

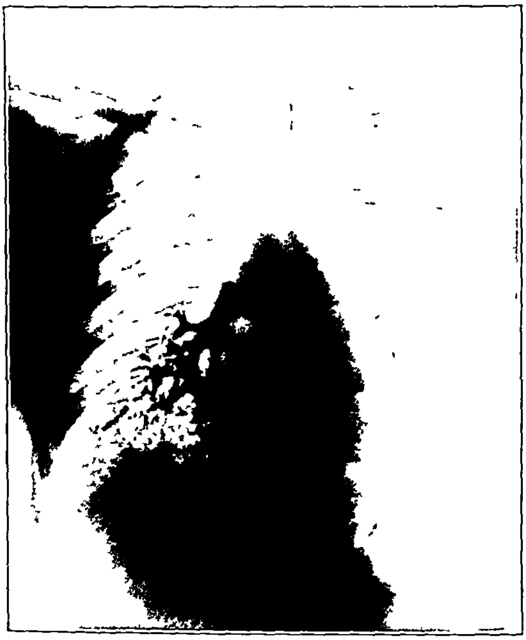

Fig 4.—Normal tracheobronchial tree injected with iodipin, 18 cc, introduced through intubation cannula: The trachea, main bronchi, the bronchioles and some of the alveoli in the lower lobes are well delineated.

Pathologic.—Larynx: In the literature, no reference is made to roentgenography of the larynx visualized by injection. For the purpose of studying the lumen in the stenotic larynx, the oil was injected into the larynx and a profile picture was snapped while the oil was flowing through the larynx. In several cases the narrowed subglottic region was well delineated.

In tracheotomized patients, the following procedure was adopted: A finger cot was filled with a fluid contrast substance, and a string was tied to each end of the finger cot. A probe, carrying a long string, was passed through the tracheal fistula into the pharynx and out of the mouth The oral end of this string was then attached to one end of the finger cot, the tracheal cannula was reinserted, and the finger cot was pulled into the larynx By this method the dimensions of the narrowed subglottic lumen of the larynx could readily be demonstrated in the roentgenogram (fig. 5).

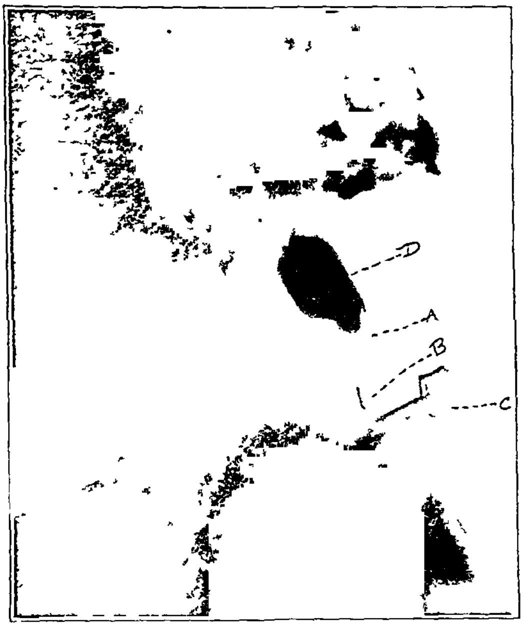

Fig 5.—Tracheotomized patient: Finger cot filled with opaque material has been pulled into the larynx from above; the stenotic area extends from *A* to *B* above the cannula, *C*, distended portion of finger cot, *D*, is in the hypopharynx

Trachea and Bronchi: Distortion, obstruction or displacement of the trachea and main bronchi are delineated with much greater clearness than in ordinary roentgenograms. Occasionally a reservoir bronchus pulled up by fibrosis or adhesions may be demonstrated.

Bronchiectasis: The diagnosis of bronchiectatic cavities, which hitherto has been very difficult for both internists and roentgenologists, is greatly simplified in the injected lung. The bronchiectases stand out as club-shaped, grapelike, or fusiform swellings, along the course of the bronchial tree (figs. 6 and 7).

The following case is rather illuminating:

In 1926, an ex-soldier, claiming disability as a result of his service during the World War, was admitted to Diagnostic Center no. 1 in the Cincinnati General Hospital. His chief complaints were cough and profuse expectoration. He had been refused compensation at four Veterans' Bureau examination centers on the ground that his illness had no service connection. Bronchography after injection disclosed two large bronchiectatic cavities situated behind the heart shadow. The disease was then retraced to an attack of influenza contracted in March, 1919, and the patient was awarded back compensation from that date forward.

Lung Abscess: It is not always possible to inject a lung abscess. This may be due to the fact that the cavity is filled with secretion or has a very narrow connection with a bronchus. If the cavity can be evacuated through a bronchoscope, the oil may then be injected. The relation of the cavity to the bronchial tree should in a large measure determine whether the case should be treated by bronchoscopy and irrigation or by surgical measures. It is apparent that a peripherally located abscess with a narrow drainage bronchus is unfavorable for endobronchial treatment.

Tuberculosis: Although some authors, fearing congestion and hemorrhage, have expressed some doubt as to the advisability of injecting tuberculous lungs, Archibald[14] and Ballon[8] undertook bronchography in a large series of such cases without noting any bad effects.

Cavities: The study of cavitation is interesting. Some difficulty may be encountered in filling apical cavities; but, on the other hand, unsuspected cavities may be disclosed. In one of our patients who had been under close clinical and roentgen-ray observation for three years, a large basal cavity with poorly defined walls was delineated for the first time after iodipin had been introduced (fig. 8).

Pneumonography.—Pneumonography gives valuable information as to the limits and thickness of the cavity walls. A poorly defined wall indicating softening makes the prognosis more unfavorable. The differential diagnosis between an infiltrated lung area and a thickened pleura or effusion may be determined by pneumonography. After artificial pneumothorax, interesting observations have been made by Geriaud and DeRegnier,[15] showing that some function still remains despite the collapsed condition of the lung.

One of our cases of pneumothorax showed that the bronchial structures as a whole were firmly compressed against the larger bronchi.

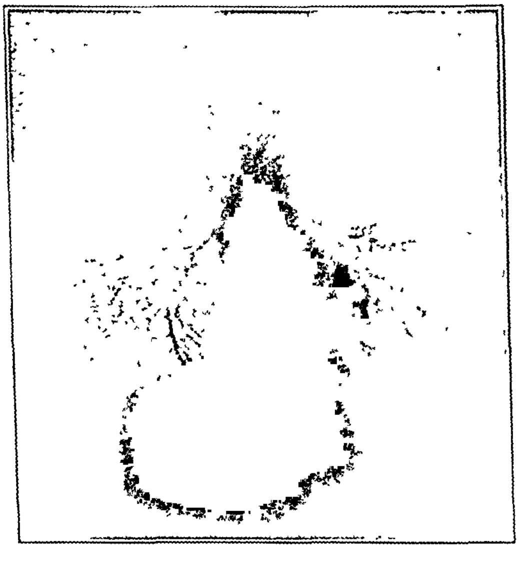

Fig. 6.—Numerous fusiform bronchiectatic cavities in the left lower lobe. Patient was injected with about 9 cc. of lipiodol in each lung.

Archibald[14] finds bronchography valuable in establishing the indications for thoracoplasty, and also employs it in the study of the progress of cases after operation.

Fistula: Moeller and von Magnus[12] injected the outlet of an empyema fistula and found that the iodumbrin had entered a bronchus, thus demonstrating the presence of a bronchopneumopleural fistula. The fistula, which had shown very little tendency to heal, closed within three weeks after the treatment.

Tumor: Injection of the lung aids in the differential diagnosis between tumor and abscess. In tumors of the pleura or lung parenchyma, the injected bronchi either terminate at the site of the tumor or seem to be pushed aside by the growing neoplasm. The value of bronchography in this condition is greatly enhanced if it is combined with bronchoscopy.

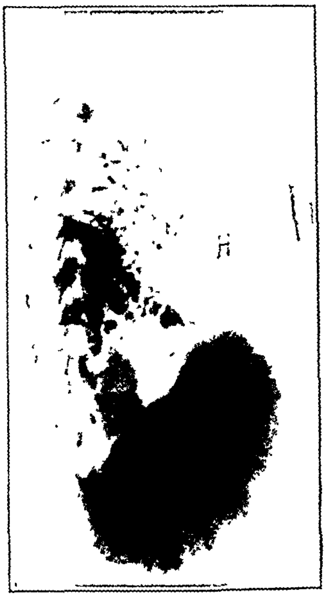

Fig. 7.—Lateral view of chest showing numerous grapelike bronchiectatic cavities in the base of the left lung behind the heart shadow, *H*. Patient was injected with about 18 cc. of lipiodol.

EFFECTS OF INJECTING THE BRONCHI

As a rule, endobronchial injection is well borne by the patients, and no disturbing after-effects are encountered.

Dyspnea. — Dyspnea during and shortly after the injection occurred in a few of our cases, and was especially marked and persistent in one patient with a collapsed lung, the oil entering the functioning lung. Severe dyspnea and cyanosis were observed in a patient with myocardial insufficiency. Ordinarily, when dyspnea occurs it is probably due to the mechanical effect of the oil combined with susceptibility to cocaine. Slow injection tends to diminish the mechanical factor.

Fever.—A slight febrile reaction frequently follows the introduction of the oil. The fever usually subsides within a day or two. In exceptional cases, it may persist for several days. Expectoration is usually increased for a few days after the introduction of the oil, after which the quantity of sputum may become normal or even subnormal.

In one of our cases of pulmonary tuberculosis, the patient expectorated some blood for the first time a few days after the injection. In two other cases which had been under clinical observation for some months, tubercle bacilli appeared for the first time after the oil had been introduced, thus establishing the diagnosis, which had been uncertain in both patients. This test may prove of value in doubtful cases, and is comparable to the diagnostic expedient with potassium iodide administered for the purpose of freeing tubercle bacilli in the sputum. Injection of the oil is contraindicated in febrile or cachectic patients and in those with cardiac decompensation.

Elimination.—A considerable portion of the injected oil is ejected by expectoration. The remainder is eliminated by absorption. According to Moeller and von Magnus, no traces of iodine could be found in the urine after a lapse of six days. In two of our cases, bronchography showed remains of the iodipin in the lung five weeks after it had been injected.

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[14] Archibald, E.: X-Ray Demonstration of Pulmonary Changes in Tuberculosis by Lipiodol Injection, Canad. M. A. J. 15: 1000-1002 (Oct.) 1925.

[15] Geriaud, A., and DeRegnier, L.: Studies in Pneumothorax, Rev. tuberc., series 3, 6: 5.

SUMMARY

1. Injected iodized oil has proved to be an excellent contrast substance in roentgenography of the larynx, trachea and bronchi.
2. The oil may be introduced by several methods, including injection with the laryngeal syringe, puncture through the cricothyroid membrane, injection through a bronchoscope, insertion of a catheter into the trachea, or the "swallowing" method.
3. The insertion of a specially devised double barreled intubation tube, with a main channel for breathing and a secondary channel for the oil, provides a simple and effective method for endotracheal injection. It may be used in both children and adults (figs. 1 and 2).
4. In order to direct the flow of the oil into a particular area or region of the lung, it is frequently advantageous to inject the bronchi and change the position of the patient, under fluoroscopic control.
5. The normal tracheobronchial tree is beautifully delineated after injection.
6. In the stenotic larynx, the extent of the obstruction may be visualized by the introduction of radiopaque substances.
7. Distortion and displacement of the trachea and bronchi are clearly delineated.
8. Bronchiectasis, lung abscess, cavitation, the limit of pulmonary tumors and bronchopulmonary fistulas are plainly outlined.
9. As a rule, endobronchial injection of oil is well tolerated by the patients. Occasionally, dyspnea and some fever ensue.
10. Injection is contraindicated in febrile or cachectic patients and in those with cardiac decompensation.

ABSTRACT OF DISCUSSION

Dr. I. D. Bronfin, Sanatorium, Colo.: As internists, especially those of us who are called on to treat diseases of the lungs, we are greatly interested in this method of diagnosis. I myself have had comparatively little experience with this method, but it opens up a new and valuable method of diagnosis of certain diseases of the lungs which heretofore have caused great perplexity to internists. With regard to the method of injecting the oil, we who practice in tuberculosis sanatoriums are obliged to acquire a certain amount of skill in the use of the laryngoscope. We have not found any especial difficulty in training patients for the ordinary intratracheal method. The question is often raised as to how much injury is caused by the oil. I have not found any. The oil does not seem to cause any irritating effect on the pulmonary tissues as far as can be detected by auscultation. I used it first in a case of bronchiectasis in which the roentgen ray did not bear out the diagnosis. The iodized oil is still present in the lung, after sixteen weeks, but no râles are present. That opens up the question of the extent of injury a foreign substance causes to lung tissue. A few years ago such a study was made by Corper in which he showed that the presence of oil produced some infiltration of the pulmonary tissue. Clinically it has not been borne out, but it seems that there must be a little caution in using this oil. It will require a great deal of experimental work and investigation to determine this point. In cases of bronchiectasis we can usually make a diagnosis by the symptoms; but the presence of an abscess cavity in the lung is sometimes hard to detect, and if this oil will help to diagnose those cases it will prove a valuable method to the internist.

Dr. Thomas E. Carmody, Denver: I have used this oil for about a year and have had a number of roentgenograms made in these cases three or four months afterward, finding a large amount of the iodized oil still in the lung. I have not used it in tuberculous cases, as Dr. Iglauer and Dr. Bronfin have, because I did not wish to pass a bronchoscope in those cases. I have used it almost entirely through the bronchoscope, although sometimes with the tracheal syringe, and I do the same thing Dr. Iglauer does with the intubation tube although not quite so easily; but in a case in which the patient is very ill with lung abscess or any wasting condition and one wishes to map out the lung, I believe that the intubation tube will help a great deal. I had one case in which I mapped out the esophagus as well as the trachea, which is important from the standpoint of stenosis or diverticula. I believe Dr. Iglauer has brought forward something which, together with the discovery of iodized oil, will help us a great deal in mapping out these cavities. The roentgen ray alone will not map out many of them, but the injection will help us to show the cavity. One case that Dr. Iglauer showed did not appear on the roentgenogram before injection; and while the roentgenologist may be very thorough and be able to interpret the plate, the iodized oil will help him and help us.

Dr. Samuel Iglauer, Cincinnati: Dr. Bronfin raised the question of the injury to the lung from the injection of this foreign substance. This oil has been used in France for three years, and in this country for more than a year. It has been used in Denmark and in Russia, and the consensus is that it does no harm, especially to the normal lung. In pulmonary tuberculosis there is a question as to whether it does harm, but naturally the tuberculous patient will react readily to any slight insult. Two patients that were injected had never shown tubercle bacilli until the oil was introduced, and in a few days tubercle bacilli appeared in large numbers. In these cases it was of value from a diagnostic standpoint. Some of the tuberculous patients were ill for a week, especially one man who had had a thorocoplasty. Archibald, before performing a thorocoplasty, injects the tuberculous lung with this oil, and after the operation if the case does not proceed in a normal manner he may reinject to see why there is no improvement. Dr. Bronfin said that the diagnosis of bronchiectasis is usually easy. I am told by internists and roentgenologists that it is always difficult. Dr. Carmody spoke of the retention of the oil in the lung parenchyma. It is true that in pathologic cases it may remain for several weeks, but it seems to have no irritating effect. Another point about using this oil in tuberculosis: If it is true that the iodine has some bad effect on the tuberculous lung, it can be done away with by using the new oil which has just been discovered—a contrast oil which does not contain iodine but bromine, firmly bound. As regards the introduction of lipiodol with a syringe, it is quite possible to inject the

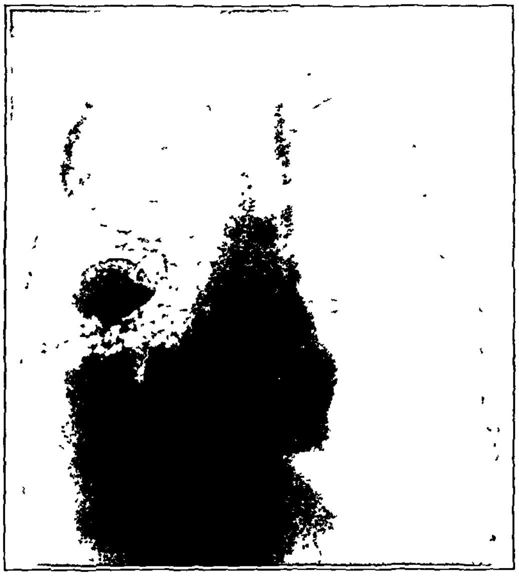

Fig. 8.—Pulmonary tuberculosis: Large cavity in right lower lobe filled with iodipin; the drainage bronchus is delineated; this patient had previously had numerous roentgenograms which had failed to show the presence of a cavity.

trachea by the ordinary injection method; but if, for example, one wishes to put the patient on his right side and inject the oil, one will have to stand on one's head. If the intubation tube is inserted, one can put him in any position and he is comfortable and can breathe through the tube. Furthermore, if he happens to cough, the intubation tube acts as a baffle, and one does not have the oil ejected and swallowed as one would with a syringe. I have had no fatalities. About a week after I had made the injection, a patient died with generalized septicemia with miliary abscesses in the spleen, etc. One of the contraindications is that this oil should not be injected into a very ill patient.

PHYSIOLOGY OF SYMPATHETIC NERVOUS SYSTEM IN RELATION TO CERTAIN SURGICAL PROBLEMS *

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The proposal to relieve spastic paralysis by surgical interruption of the sympathetic innervation of the muscles involved rests on the theory that a special function, designated "plastic tonus," depends on the sympathetic nerve fibers, and that abolition of this plastic tonus will relieve the pathologic condition. The theory seems to have arisen, in the first place, from the anatomic observations of Boeke,[1] which apparently establish the innervation of certain skeletal muscle fibers by sympathetic as well as by cerebrospinal nerve fibers. Subsequent investigations by various workers leave little doubt that in some, at least, of the skeletal muscles there are striated fibers innervated by sympathetic nerve fibers; but whether these fibers exist in all muscles and whether they differ histologically from the muscle fibers innervated by medullated nerve fibers are unsettled questions.

The functional significance of these fibers has been a matter of more speculation than observation. Some observers have reported a loss of tonus in skeletal muscles, following section of their sympathetic innervation.[2] A larger number of observers have failed to substantiate this finding.[3] The more recent development of the subject has involved the alleged distinction between "contractile" and "plastic" tonus. Sherrington[4] first called attention to the remarkable plasticity of the limb of a decerebrate animal. The limb shows a tendency to remain in whatever position is passively imposed on it, the muscle maintaining the requisite tension irrespective of length. Sherrington gave convincing reasons for interpreting these phenomena as the result of proprioceptive reflexes; that is, as reflexes set up by excitation of sensory receptors within the muscle substance and afferent nerve impulses arising therefrom. But Sherrington did not postulate a special neuromuscular mechanism for mediating the plastic effect, distinct from that involved in ordinary contraction of the muscle.

Langelaan[5] sought to establish two separate mechanisms and functions in the muscle: a contractile mechanism and a plastic mechanism. Hunter[6] assumed Langelaan's distinction to be well founded, and endeavored to show that the plastic element in tonus is eliminated by sympathectomy, while the contractile element is not disturbed. On the basis of Hunter's theory and the experiments in support of it, Royle[7] developed the operation of ramisection by which he asserts that he has relieved certain cases of spastic paralysis.

As to the validity of Langelaan's hypothesis of distinct plastic and contractile functions in muscle, it is pure speculation based to a considerable extent on misunderstanding of the work of previous observers.[8] Furthermore, it fails to harmonize with the known facts of nerve-muscle physiology. It is well established that when a nerve or muscle is stimulated, the resulting functional response is of an all-or-none character. It is independent both qualitatively and quantitatively of the strength or nature of the stimulus, provided this is adequate. One cannot vary the character or amount of response in a nerve impulse or the resulting muscle response by changing the character of the external stimulus any more than one can vary the speed of a rifle bullet by varying the pressure with which the trigger is pulled. Since all experiments indicate that nerve fibers and muscle fibers respond in the same manner to all stimuli, artificial or otherwise, it is difficult to see how the nerve fibers could be made to con-

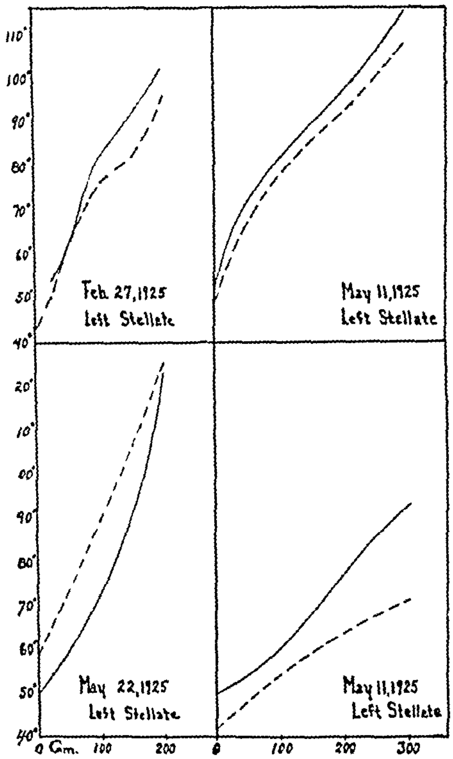

Fig. 1.—Curves correlating elbow flexion with flexing force applied in stellate experiments: Abscissas, tension applied to wrist perpendicular to ulna; ordinates, degrees of flexion; solid line, operated limb; broken line, control. February 27, three days after operation, measurements made one hour after decerebration; May 11, seventy-six days after operation, upper curves twenty minutes, lower curves three hours after decerebration; May 22, seventy-four days after operation, one and one-half hours after decerebration.

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* From the Laboratories of Physiology and Neuropathology, Medical School of Harvard University.

* Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Boeke, J.: Internat. Monatschr. f. Anat. u. Physiol. **28**: 377, 1911. Boeke, J., and Dusser de Barenne, J. G.: Proc. Sect. Sc. Wet. Amsterdam **21**: 1227, 1919.

[2] De Boer, S.: Ztschr. f. Biol. **65**: 239, 1915. Hunter, J. I.: Surg. Gynec. Obst. **39**: 721 (Dec.) 1924. Kuntz, A., and Kerper, A. H.: Am. J. Physiol. **76**: 121, 1926.

[3] Dusser de Barenne, J. G.: Folia neuro-biol. **7**: 651, 1913. Cobb, S.: Am. J. Physiol. **46**: 478 (July) 1918. Meek, W. J., and Crawford, A. S.: Am. J. Physiol. **74**: 285 (Oct.) 1925. Coman, F. D.: Bull. Johns Hopkins Hosp. **38**: 163, 1926.

[4] Sherrington, C. S.: Quart. J. Exper. Physiol. **2**: 109, 1909.

[5] Langelaan, J. W.: Brain **38**: 235, 1915.

[6] Hunter (footnote 2): Am. J. M. Sc. **170**: 469 (Oct.) 1925.

[7] Royle, N. D.: Surg. Gynec. Obst. **39**: 701 (Dec.) 1924.

[8] Cobb, S.: Physiol. Rev. **5**: 518 (Oct.) 1925.

duct the alleged plastic influence whereby the length of the muscle is caused to remain unchanged, without any release of contractile effort such as results from ordinary excitation. All the known facts of plastic tonus can be explained in terms of the well known, all-or-none type of response in the individual nerve and muscle fibers, as has been shown by the work of Liddell and Sherrington[9] and of Fulton.[10] A serious objection to the theory of the influence of the sympathetic nerves on muscle tonus is the absence of any contractile response to artificial stimulation of these nerve fibers; and supplementing this is the absence of the effect of drug action that one would expect in tissues innervated by the sympathetic fibers.[11] Finally, there is the preponderance of evidence from previous investigations of sympathectomy, tending to show no consistent change in tonus at all resulting from this procedure. The positive results of Hunter were too few to justify a final conclusion in a problem so beset with possible sources of error.

Although the theory of a plastic function as distinct from contractile function is untenable, it is nevertheless possible that sympathectomy might have some effect, if there are indeed skeletal muscle fibers innervated by sympathetic nerve fibers. If these particular fibers participate in the postural reflex known as decerebrate rigidity, we should expect a slight decrease in rigidity after they are cut. If the contraction of these particular fibers is more sluggish than that of the fibers innervated by the cerebrospinal nerves, we should expect the contraction and relaxation of the muscle as a whole, after their elimination, to be somewhat more brisk. In other words, the muscular contraction would resemble less than ever the slow, plastic type of contraction found in smooth muscle. If this were actually observed, there might be some basis for the assertion that there is a decrease in plasticity following sympathectomy or ramisection.

Hunter maintained that the effects of sympathectomy became more marked for several weeks after the operation was performed. If these effects were due to the mere withdrawal of efferent sympathetic impulses from the muscles there could be no such progressive increase in the effect, for impulses cease to flow from the cut surface of a nerve within a few seconds after the section is made. There might, however, be a delayed effect due to metabolic and physical changes in the muscle.

With these facts in mind, experiments were performed on a series of seventeen cats by Forbes, Cannon, O'Connor, Hopkins and Miller.[12] In eleven of these the fore limb on one side was deprived of its sympathetic innervation by removal of the stellate ganglion; in the other six, the abdominal sympathetic chain of one side was removed. In three of the animals they performed decerebration first, and then, after observing whether or not decerebrate rigidity was symmetrical on the two sides, performed the sympathetic operation and observed the immediate effect of it, if any. In all the rest of the series the sympathetic operation was performed first aseptically, and after a period of from three to eighty days the animal was decerebrated, and rigidity on the two sides quantitatively studied by means of spring balances to measure the tension of muscle, and protractors to measure the angles of the elbow or ankle joints.

These experiments showed, in the first place, that if precautions are taken to avoid confusion due to the influence of asymmetrical posture (shown by Magnus and de Kleijn to modify decerebrate rigidity), tonus will usually be approximately symmetrical on the two sides in a decerebrate animal, prior to sympathectomy, and a fairly satisfactory basis can thus be found for testing the effect of the operation. But uncontrolled changes in decerebrate rigidity occasionally occur and render the basis of comparison unreliable. A large number of consistent results would be needed to warrant conclusions.

As to the effect of sympathectomy, the results of these experiments were by no means uniform. Comparison of the operated limb with its mate usually showed almost perfect symmetry; that is, no appreciable difference. Sometimes there was less rigidity on the operated side, sometimes more. Averaging the measurements of the entire series showed slightly less rigidity on the operated side, but this difference was small compared with the individual fluctuations in both directions making up the average. Typical curves of tonus from these experiments are shown in figures 1 and 2. Figure 3 shows an animal in which the sympathectomized limb consistently showed more rigidity than its mate. The conclusion from these experiments was that, if there was any loss of tonus in consequence of the operation, it was insignificant. Certainly, decerebrate rigidity persisted at least approximately undiminished after sympathectomy, and continued to manifest its plastic features.

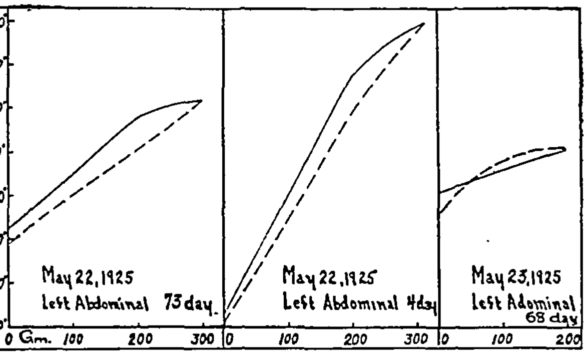

Fig. 2.—Curves correlating ankle flexion with flexing force applied in abdominal sympathetic experiments: Abscissas, tension applied to foot perpendicular to metatarsal bones; ordinates, degrees of flexion; solid line, operated limb; broken line, control. May 22, four days after operation, measurements forty minutes after decerebration. May 22, seventy-three days after operation, measurements fifty minutes after decerebration. May 23, sixty-eight days after operation, measurements one hour after decerebration.

Since the paper describing these experiments went to press, a communication by Kuntz and Kerper[2] has appeared in which a somewhat more refined mechanical method is used for measuring tonus in the knee extensor muscles. A sympathectomized limb was compared with its mate in the otherwise intact animal; that is, the decerebrate preparation was not studied. The results of these authors seem to show a consistent diminution of tonus following sympathectomy, thus confirming Hunter and Royle; but the intact cerebrum complicates the problem of interpreting these experiments. In addition to their experiments on cats and dogs, they repeated Hunter's experiments on birds and corroborated his observations, which point strongly to a postural reflex mechanism involving the sympathetic nerves, more plastic than the corresponding reflex mechanism of the somatic nerves. The experiment seemed to show that whereas the somatic nerves tend to hold the wing in its normal posture but are inadequate to do so without the aid of the sympathetic nerves, the latter tend to make the wing retain whatever posture is imposed on it. The results are highly suggestive, but it is uncertain to what extent the mammalian neuromuscular organization resembles that of birds.

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[9] Liddell, E. G. T., and Sherrington, C. S.: Proc. Roy. Soc. **96**: 212, 1924.

[10] Fulton, J., and Liddell, E. G. T.: Proc. Roy. Soc. **98**: 577, 1925.

[11] Huggett, A. St. G., and Mellanby, J.: J. Physiol. **60**: viii, 1925.

[12] Forbes, A.; O'Connor, J.; Hopkins, A. M., and Miller, R. H.: Muscular Rigidity With and Without Sympathetic Innervation, Arch. Surg., to be published.

Orbeli [13] reports that stimulation of the sympathetic nerves simultaneous with threshold stimulation of the somatic nerves adds nothing to contraction until fatigue appears. With the onset of fatigue, sympathetic stimulation increases the contraction evoked by somatic stimulation. The sympathetic effect shows a much longer latency than muscular contraction evoked by motor-nerve stimulation, a latency which approximates that of the action of the sympathetic nerves on the heart. These observations suggest that the nerve impulses reaching the muscle fibers by this channel act on them in a different manner from the ordinary somatic motor nerve impulses. Apparently they do not stimulate the muscle; that is, they do not cause contraction. Yet it is conceivable that at the sympathetic nerve endings a chemical effect of some sort is produced which alters the state of the muscle and, in some way that is yet to be explained, counteracts the tendency to fatigue.[14] It is conceivable that the loss of this influence may explain the observations of Hunter, Royle, Kuntz and Kerper, and others who have found changes in tonus following sympathectomy. Impairment of the ability to resist fatigue would tend to diminish the amount of tonic contraction, especially under conditions in which fatigue is likely to develop. Uncertainty as to the conditions favoring fatigue, complexity of the circulatory changes resulting from sympathectomy, and possibly other obscure phenomena are factors that tend to confuse this problem and render it difficult to determine why some experiments are positive and some negative.

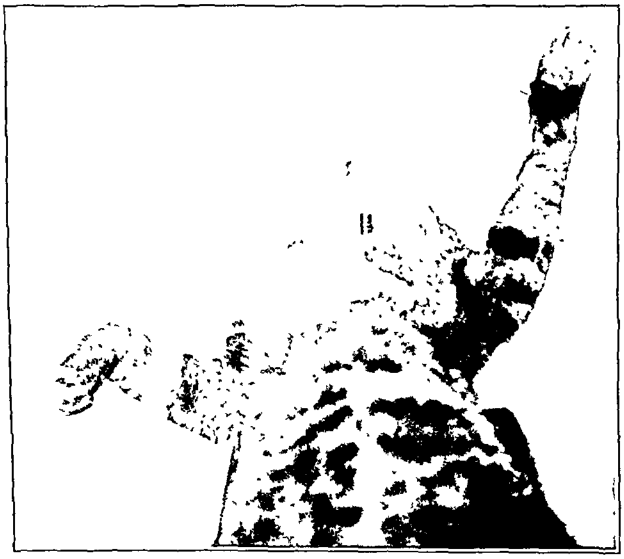

Fig. 3.—Appearance two hours after decerebration, six days after left stellate operation: persistent maintenance of greater rigidity in operated limb.

In any case, we feel that there is no justification for differentiating two distinct components, contractile and plastic, in the tonus of mammalian skeletal muscle. Sherrington is often quoted in support of this view, but he never made such a distinction. He merely called attention to the remarkable degree of plasticity in the decerebrate limb traceable to proprioceptive reflexes.

The relief of spasticity following ramisection has been slight in most of the cases reported as successful. Some operations have been entirely unsuccessful.[15] Many factors may enter into the success of such an operation. Besides the actual effect of interrupting the sympathetic nerve path there are other possible causes of improvement, such as exercises, mental suggestion, hospital care, and nursing. It is probably premature to ascribe the successes to the operation itself, and it may be that incidental features in the treatment will be found responsible for whatever good has been accomplished.

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[13] Orbeli, L. A.: J. Petrograd M. Inst. **6**: 8, 1923; M. Sc. Abstr. & Rev. **10**: 486, 1924.

[14] Gruber, C. M.: Am. J. Physiol. **33**: 335, 1914.

[15] Crothers, Bronson: Cases Treated by Sympathetic Ramisection, Arch. Neurol. & Psychiat. **13**: *638* (May) 1925.

ANATOMY OF THE SYMPATHETIC NERVOUS SYSTEM

WITH REFERENCE TO SYMPATHECTOMY AND RAMISECTION *

S. W. RANSON
ST. LOUIS

The observations that have been made on the relation of the sympathetic nerves to disease have not yet been organized into a coherent system. And it is surprising that where the results obtained by the resection of these nerves are least open to question, they are not the results that one would have predicted from his knowledge of the structure and function of the sympathetic system. Probably many of the apparent contradictions will disappear as our knowledge becomes more precise. But although a great deal seems to have been accomplished and a means of surgical relief appears to have been found for what were previously hopeless conditions, work in this field should still be approached in the spirit of the investigator; i. e., with open minded skepticism.

The sympathetic nervous system is an aggregation of ganglions, nerves and plexuses through which the viscera, glands, heart, blood vessels and smooth muscle in other situations receive their innervation. The most conspicuous feature of the system is a pair of ganglionated nerve cords or sympathetic trunks which extend vertically through the neck, thorax and abdomen. Each sympathetic trunk is composed of a series of ganglions bound together by short nerve strands (fig. 1). Every spinal nerve is connected with the sympathetic trunk of its own side by one or more gray rami communicantes through which it receives sympathetic fibers for the control of blood vessels, sweat glands and smooth muscles of the hair follicles situated within the territory of its distribution. The majority of the nerve fibers taking origin in the ganglions of the sympathetic chain are distributed through the gray rami and the spinal nerves.

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* From the Washington University Medical School.

* Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

The ganglions of the thoracic and abdominal portions of the chain are less concerned with visceral activity than with constriction of the peripheral blood vessels, erection of the hairs, and secretory activity of the sweat glands. But the upper thoracic and cervical ganglions bear a more intimate relation to the thoracic viscera, since they contain the cells of origin of postganglionic fibers for these viscera.

The thoracic and upper lumbar nerves are connected with the sympathetic chain by white as well as gray rami communicantes. These white rami contain both afferent and efferent fibers. The latter take origin from cells in the gray matter of the spinal cord, travel through the ventral root and white rami, and enter the sympathetic system, to terminate in synaptic relation with the nerve cells found in the sympathetic ganglions. They are often designated as preganglionic fibers, while those that arise in the ganglions and relay the impulses onward are called postganglionic. The gray rami contain postganglionic fibers; the white rami contain preganglionic fibers.

The majority of the preganglionic fibers turn either upward or downward in the sympathetic chain, and run for varying distances within it before ending in its ganglions. The cervical sympathetic trunk is composed exclusively of preganglionic efferent fibers, derived through the white rami from the upper thoracic nerves and ascending to terminate in the cervical sympathetic ganglions. The lumbar and sacral portions of the trunk are composed in the major part of descending fibers derived through the white rami from the lower thoracic and upper lumbar spinal nerves.

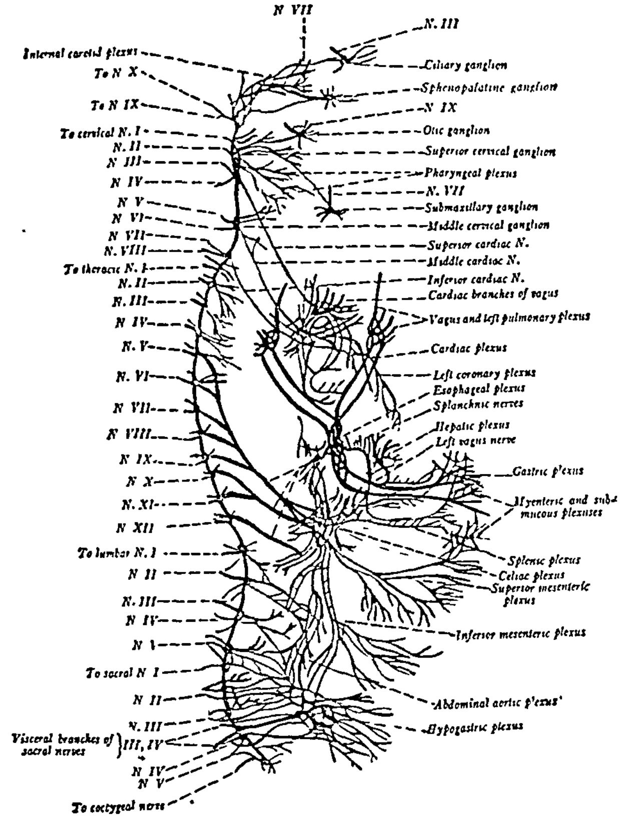

Fig. 1.—Diagram of the sympathetic nervous system. Those nerves and plexuses which are composed chiefly of fibers derived from cerebrospinal nerves are black; the sympathetic ganglions and the nerves and plexuses which are composed chiefly of fibers that arise in these ganglions are gray.

Those fibers of the white rami, which are concerned with the innervation of the abdominal viscera, pass into the splanchnic nerves and end in the celiac ganglion. These fibers reach the splanchnic nerves after passing through the lower half of the thoracic sympathetic chain; but they are not interrupted in the chain ganglions through which they pass.

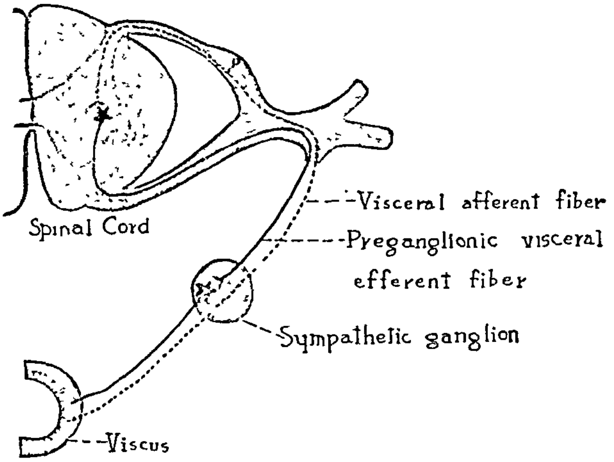

Fig. 2.—Diagram of a sympathetic reflex arc.

The sympathetic nervous system receives additional fibers from the spinal cord by way of the visceral branches of the third and fourth sacral nerves, and from the brain through certain of the cranial nerves.

There are, then, these three streams of preganglionic visceral efferent fibers: (1) the cranial stream from the third, seventh, ninth and tenth cranial nerves; (2) the thoracicolumbar stream, from the thoracic and upper lumbar spinal nerves by way of the white rami, and (3) the sacral stream from the second, third and fourth sacral nerves. The cranial and sacral streams belong to what is commonly called the parasympathetic system. Surgeons have confined their attention to the thoracicolumbar stream, i. e., to the sympathetic system proper, and we need not here consider the parasympathetic system in detail.

Most of the sympathetic nerves contain, in addition to the fibers already discussed, also sensory fibers, which convey impulses from the viscera to the spinal cord. These sensory fibers have their cells or origin in the spinal ganglions and reach the sympathetic system by way of the white rami. Visceral reflexes therefore travel arcs of at least three neurons each (fig 2). The impulses reach the spinal cord along visceral afferent fibers in the dorsal root and leave along preganglionic visceral efferent fibers in the ventral roots and white rami. These fibers end in sympathetic ganglions, and the impulses which they carry are relayed to involuntary muscle and glandular tissue by postganglionic fibers. The ganglions of the sympathetic trunk do not serve as reflex centers but only as relay stations in the conduction pathways from the spinal cord to the viscera.

The sensory fibers for the heart have recently acquired a new interest as a result of the relief of anginal attacks by cervical sympathectomy. In order to sever these fibers, Jonnesco[1] removed the middle and inferior cervical and the first thoracic ganglions of the left sympathetic chain in a case of severe angina pectoris. The patient, who was kept under observation for four years, remained free from anginal attacks.

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[1] Jonnesco, T.: Bull. Acad. de méd., Paris 84: 93 (Oct. 5) 1920.

That this operation stops anginal pain can be readily understood, since the direction in which the pain radiates indicates that the fibers concerned reach the sympathetic system through the white rami of the upper three thoracic nerves on the left side (fig. 3). But the work of Coffey and Brown[2] seems to make this simple explanation untenable. These authors found that the same results can be obtained by sectioning the sympathetic trunk and superior cardiac nerve below the superior cervical ganglion or by excising this ganglion. At first they were inclined to believe that this demonstrated that the painful afferent impulses from the heart reached the brain through some of the connections of the superior cervical ganglion. A possible but highly improbable path for such impulses is indicated by the dotted line in figure 3. The good results which removal of the left superior cervical sympathetic ganglion have given in the hands of many surgeons are not easily explained on the basis of what is known concerning the innervation of the heart. Histologic, physiologic and clinical evidence makes it almost certain that in high cervical sympathectomy the afferent fibers from the heart are not injured.

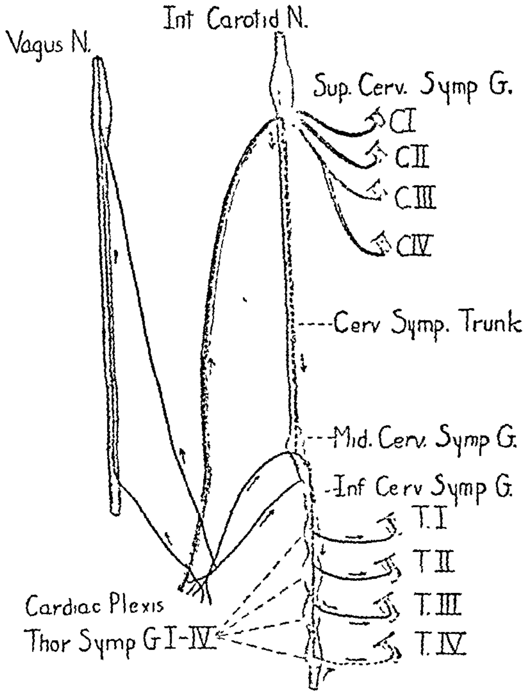

Fig. 3.—Diagram of the afferent pathways leading from the aortic plexus to the spinal cord and brain. The dotted lines represent a possible but highly improbable path.

Histologically, it is possible to trace sensory fibers through the sympathetic system because of their relatively large size. By this method Edgeworth,[3] working with the dog, and I,[4] working with the cat, have shown that the large sensory fibers in the cardiac plexus come from the vagus and from the upper three thoracic nerves. From these thoracic nerves, large fibers can be traced through the corresponding white rami and sympathetic trunk to the inferior and middle cervical sympathetic ganglions, and the nerves passing from those ganglions to the heart. No large sensory fibers are found in the cervical sympathetic trunk above the level of the middle cervical ganglion. The specimens removed at operation from patients suffering from angina pectoris usually show no large sensory fibers in either the cervical sympathetic trunk or the superior cardiac nerve. There is therefore every reason to believe that the sensory pathways for the heart in man are essentially the same as those in the cat and dog.

Physiologic evidence supports this conception of the sensory pathways. Langley[5] found that, if the connection between the vagus and the superior cervical sympathetic ganglion had previously been divided, stimulation of the cervical sympathetic trunk or of the superior cervical sympathetic ganglion never caused struggling or other signs of pain.

The clinical evidence, which is most important because it applies directly to man, is equally clear. The pain in angina pectoris is referred to the areas of cutaneous distribution of the first three thoracic nerves of the left side. This shows that the painful afferent impulses in angina reach the spinal cord along these nerves. Recently Jonnesco and Ionescu[6] have investigated the sensory pathways for the heart during operations for angina carried out under local anesthesia. They found that, if the upper connections between the vagus and sympathetic trunk had previously been severed, neither pain nor reflex responses could be obtained by stimulating the upper part of the cervical sympathetic trunk. But stimulation of cardiac nerves from the inferior cervical ganglion and from the annulus of Vieussens caused pain and reflex changes in respiratory rhythm. Avulsion of the first thoracic ganglion caused severe pain in the left arm. In a patient with angina pectoris, Schittenhelm and Kappis[7] injected procaine into the upper part of the sympathetic trunk without effect on the pain, but injection of the lower part caused the pain to disappear. Injection of the vagus gave no relief. During the course of an operation and before the first thoracic ganglion had been laid bare, one of Leriche's[8] patients had an anginal attack. Infiltration of the inferior cervical ganglion with procaine stopped the pain at once.

These clinical observations make it perfectly clear that in man, as in the cat, pain in the heart and aortic arch is mediated by way of the middle and inferior cardiac nerves through the lower cervical and upper thoracic portions of the sympathetic trunk, and thence along the upper thoracic white rami and the corresponding spinal nerves of the left side to the spinal cord.

In spite of the fact that there are no sensory fibers in the upper part of the cervical sympathetic trunk, resection of the superior cervical sympathetic ganglion has given good results in many cases of angina pectoris. To account for the relief which this operation gives is more than can be expected of anatomy. Let the problem be passed on to the physiologist.

It is true that sensory fibers reach the cardiac plexus by way of the cardiac branches of the vagus (fig. 3). But the afferent impulses which reach the brain from the heart by way of the vagus probably seldom give rise to pain but expend themselves in the production of reflexes, as, for example, the lowering of blood pressure as a result of the stimulation of the vagodepressor fibers ending in the arch of the aorta.

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[2] Coffey, W. B., and Brown, P. K.: Surgical Treatment of Angina Pectoris, Arch. Int. Med. **31**: 200 (Feb.) 1923; **34**: 417 (Oct.) 1924.

[3] Edgeworth, F. H.: J. Physiol. **13**: 260, 1892.

[4] Ranson, S. W.: J. Comp. Neurol. **29**: 313, 1918.

[5] Langley, J. N.: Lancet **2**: 955 (Nov. 8) 1924.

[6] Jonnesco, T., and Ionescu, D.: Ztschr. f. d. ges. exper. Med. **48**: 490, 1926.

[7] Schittenhelm, A., and Kappis, M.: München. med. Wchnschr. **72**: 753 (May 8) 1925.

[8] Leriche, R.: Presse méd. **33**: 1361 (Oct. 14) 1925.

Eppinger and Hofer [9] have advocated section of the depressor branch of the vagus for the relief of angina pectoris. But it is doubtful whether this nerve has a separate existence in man. The uncertainty as to the existence and topography of this nerve is evident from the directions given for its identification. The vagus is dissected free up to the jugular foramen, and all of its branches are exposed and followed for some distance. Only those twigs which run free into the thorax, or those which, after separation from the vagus or from the superior laryngeal nerve, join the vagus again are considered as belonging to the depressor nerve. These directions are in themselves evidence that there is no well defined depressor nerve in man. It is possible that the twigs carrying depressor fibers might be identified by stimulation; but Eppinger and Hofer, out of consideration for their patients, failed to make the test in any of their cases. Odermatt [10] stimulated what he thought was the depressor, but this had no effect on the blood pressure. Wenckebach [11] admits that in many cases there is no clearly differentiated depressor nerve.

Through the work of Hunter [12] and Royle,[13] attention has recently been directed to the possibility that the tonus of skeletal muscle may be maintained by the sympathetic system. It is well known that the muscles are innervated by unmyelinated as well as myelinated fibers (Boeke and Kulchitsky). Degeneration experiments tend to show that part of the unmyelinated fibers take origin in the sympathetic ganglions. But observations, recently made by Hinsey and not yet published, prove that many, perhaps a majority of them, are not of sympathetic origin, since they are present in large numbers in the terminal branches of the motor nerve after degeneration of all of the sympathetic fibers. A review of the physiologic evidence for and against the sympathetic origin of tonus would be out of place in this paper. I wish to state, however, that the results of my experiments on cats have convinced me that the sympathetic nervous system is not responsible for the exaggerated tonus of the skeletal muscles which follows decerebration, or for that caused by tetanus toxin.

As yet no attempts have been made to interfere surgically with the craniosacral autonomic (parasympathetic) system by section of either the vagus or the visceral branches of the third and fourth sacral nerves. But section or, in certain cases, mere blocking of the splanchnic nerves offers attractive possibilities. These nerves contain sensory fibers and preganglionic visceral efferent fibers derived from the lower seven thoracic white rami communicantes (fig. 1). The preganglionic fibers end in the celiac ganglion, whence the impulses are relayed by postganglionic fibers along the periarterial plexuses composing the solar plexus. In this way inhibitory impulses are conveyed to the musculature of the stomach and intestines, and motor impulses to the pylorus. The splanchnics have been divided for atony and ptosis of the stomach by Bircher, and in two of his cases Hahn [14] made a roentgenologic study of the stomach. In both cases, the stomach returned to the normal shape and position and the pylorus became relaxed following the operation. In a patient with a diagnosis of gastric ulcer, Braun [15] found no signs of ulcer when the abdomen was opened. Because of the severe pain which the patient had been suffering, Braun sectioned the splanchnic nerves, with apparently good results.

Havlicek [16] blocked the splanchnic nerves in two cases of anuria in children with scarlet fever. His object was to interrupt temporarily the vasoconstrictor impulses to the arterioles in the kidney with the idea of stopping the spasm of these vessels, which was responsible for the anuria.

Periarterial sympathectomy, advocated by Leriche [17] as a cure for many painful and trophic disorders of the extremities, has caused renewed interest in the innervation of the blood vessels. It is said that after resection of the sympathetic plexus which surrounds the femoral or brachial artery the corresponding limb becomes hyperemic, old ulcers heal rapidly, and the pains of angiospasm, tender stumps and causalgia are relieved. These results seem to indicate that the vasoconstrictor and sensory fibers for the peripheral vessels accompany the main arterial trunks into the limbs. But this is in conflict with all that is known concerning the innervation of the blood vessels.

Vasoconstrictor impulses leave the spinal cord along preganglionic fibers, which reach the sympathetic system through the thoracic and upper lumbar spinal nerves and the white rami associated with them. The postganglionic vasoconstrictor fibers arise in the ganglions of the sympathetic chain, run by way of the gray rami communicantes to the spinal nerves, and follow these and their sensory branches to the subcutaneous tissue, where they are given off for the innervation of the small arteries and arterioles (fig. 4). Other fibers are given off from the larger nerves and reach the main arteries at various points along their course. A different arrangement holds for the vessels of the thoracic, abdominal and cranial cavities, since the vasoconstrictor fibers for these vessels do not join the spinal nerves but run directly to the vessels and accompany them to their distribution.

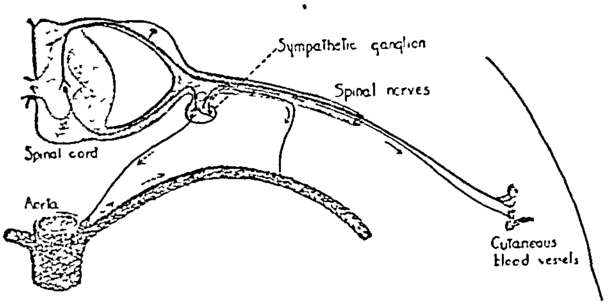

Fig. 4.—Diagram of the innervation of the blood vessels. The arrows with broken shafts indicate the path for vasoconstrictor impulses according to the theory of Leriche.

It is well established that in animals practically all the vasoconstrictor fibers for an extremity are found in the spinal nerves, and very few, if any, accompany the larger arteries for long distances toward the periphery. It had previously been universally conceded that they follow the same course in man. But the results of periarterial sympathectomy are out of harmony with this conception. In order to explain the hyperemia that results from this operation, Leriche assumes that in man the vasoconstrictor fibers for the cutaneous blood vessels have a course analogous to that taken by the fibers for the splanchnic vessels; i. e., they join the aorta or other large arteries in the thoracic and abdomi-

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9. Eppinger, H., and Hofer, G.: Therap. d. Gegenw. **64**: 166, 1923.
10. Odermatt, W.: Deutsch. Ztschr. f. Chir **182**: 341, 1923.
11. Wenckebach, K. F.: Brit. M. J. **1**: 809 (May 10) 1924
12. Hunter, J. I.: Brit. M. J. **1**: 197 (Jan. 31), 251 (Feb. 7), 298 (Feb. 14), 350 (Feb. 21), 398 (Feb. 28) 1925.
13. Royle, N. D: M. J. Australia **1**: 77 (Jan. 26) 1924.
14. Hahn, O.: Ergebn. d. Chir. u. Orthop. **17**: 1, 1924.
15. Braun, W.: Zentralbl. f. Chir. **48**: 1038 (July 23) 1921.
16. Havlicek, H.: Zentralbl. f. inn. Med. **46**: 465 (May 16) 1925.
17. Leriche, R.: Ann. Surg. **74**: 385 (Oct.) 1921.

nal cavities and make their way to the periphery in the periarterial sympathetic plexuses. Against this assumption there should be recorded the observations of Kramer and Todd [18] showing that in man branches are given off by the large nerves to the principal arteries of the extremities at various points along their course. Furthermore, it is improbable that there is any fundamental difference in the innervation of the blood vessels in man and the laboratory animals.

It will be evident from the foregoing discussion that no satisfactory explanation of the hyperemia following periarterial sympathectomy has yet been presented. It is equally impossible to explain the relief from pain which some patients experience after this operation. That there are sensory fibers supplying the blood vessels is well known, but these for the most part at least run centrally in the spinal nerves, and there is no reason to believe that they run in the periarterial sympathic plexuses for any considerable distance.[19] Perhaps the relief from pain may depend on the hyperemia and resultant improved peripheral nutrition.

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[18] Kramer, J. G., and Tood, T. W.: Anat. Record **8:** 243, 1914.

[19] Wiedhopf, O.: München. med. Wchnschr. **72:** 417, 1925.

THE EFFECT OF SYMPATHECTOMY ON SPASTIC PARALYSIS OF THE EXTREMITIES [*]

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For many years, evidence has been offered both to prove and to disprove the dual innervation of striated muscle by the cerebrospinal and sympathetic nervous systems. The question remained more or less an academic one, in the discussion of which anatomists and physiologists were the leading figures. Recently, however, the surgeon has entered the field mainly as a result of the suggestion by Royle, supported by Hunter, that the spasticity of paralyzed extremities might be decreased by surgically attacking the sympathetic innervation to the muscles.

The basis for such surgical therapy may be stated rather briefly. It is assumed that striated muscle has a dual innervation from the sympathetic and cerebrospinal nervous systems. It is predicated that the normal tonus of skeletal muscle may be divided into two components; namely, a contractile and a plastic element. Further, that in spastic extremities there is an increase of the plastic component of tone. Finally, it is assumed that the sympathetic innervation to striated muscle subserves this plastic element of tone. It becomes obvious that following such a line of reasoning leads to the conclusion that, to decrease spasticity or hypertonus in an extremity, it becomes necessary to remove the sympathetic innervation to the muscles involved.

Such an hypothesis depends on several important principles, each of which must be examined carefully and should be firmly established before a clinical application is made. Otherwise our surgical therapeusis may outdistance our fundamental knowledge, and we may add more confusion to the surgery of the sympathetic nervous system, which has already suffered from a tendency toward clinical empiricism.

SYMPATHETIC INNERVATION OF SKELETAL MUSCLES

The definite establishment of the fact that skeletal muscle has a sympathetic innervation underlies the entire problem of the relation of the sympathetic system to increased tone in the muscles of an extremity. Further, if we grant that such a supply is present, we must know absolutely that such an innervation initiates, maintains or in some manner influences muscle tone.

In 1879, Tschiriew [1] demonstrated two systems of motor nerve fibers to striated muscle. In a study of the snake he pointed out the presence of nonmedullated nerve fibers with characteristic end organs, in addition to the usual medullated nerve fiber motor end plates. It should be noted, however, that the nonmedullated nerve fibers which ended typically in a grapelike ramification could be traced as a branch of a medullated nerve fiber and were thus shown not to be entirely independent structures. Three years later, Bremer [2] described fine unmyelinated nerve fibers entering the motor end plates in frogs and lizards. Some of these nonmedullated fibers had lost their myelin in their course in the muscle; some were branches of medullated fibers, but others arose from an unmyelinated plexus although they could not be traced farther centrally. Later, Perroncito [3] came to similar conclusions, and it remained for Boeke [4] to state that the endings described by these workers were not of independent origin, as they had stated, but that still other nerve endings, which he designated as "accessory," were the actual terminations of the nonmedullated fibers of sympathetic origin. Boeke described a nerve fiber and ending of each type situated hypolemmaly on a single muscle fiber. That is, a medullated system of fibers and end organs of cerebrospinal origin and a nonmedullated system of fibers and end organs of sympathetic origin. This author sectioned the oculomotor nerve near the brain stem in cats and found degeneration of both medullated and nonmedullated fibers in the levator palpebral superioris muscle. Some nonmedullated fibers remained intact, and these he regarded as of sympathetic origin.

Kulchitsky [5] repeated Tschiriew's work on the snake and stated that a single muscle fiber receives only one motor nerve ending. He pointed out that some muscle fibers receive an epilemmal ending derived from a nonmedullated nerve fiber, while others receive a hypolemmally placed medullated nerve fiber. Using Kulchitsky's personal preparations, Dart [6] confirmed the presence of two types of nerve endings but differed somewhat from the former in an interpretation of the method of innervation of the muscle fibers. Kuntz and Kerper [7] found unmyelinated nerve fibers of sympathetic origin in the intercostal muscles of dogs after they allowed time for degeneration of the somatic nerves to these muscles. Garven [8] has only recently confirmed the presence of Boeke's accessory fibers and endings, which he stated were quite independent and were of sympathetic origin.

As Langley [9] has stated, if all striated muscles contain sympathetic nerve endings, it is unusual that they cannot be seen in methylene blue preparations of the frog's sartorius muscle, in which somatic nerve endings and nerve fibers around blood vessels are brought out with ease.

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[*] Read before the joint meeting of the Section on Surgery, General and Abdominal, and the Section on Nervous and Mental Diseases at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Tschiriew, S.: Arch. de physiol. **11:** 89, 1879.

[2] Bremer: Arch. f. mikr. Anat. **21:** 165, 1882.

[3] Perroncito: Arch. ital. de biol. **41:** 183, 1904.

[4] Boeke, J.: Anat. Anz. **35:** 193, 1910; Internat. Monatschr. f. Anat. u Physiol. **28:** 377, 1911.

[5] Kulchitsky, N.: J. Anat. **58:** 152, 1924.

[6] Dart, R. A.: J. Comp. Neurol. **36:** 441, 1924.

[7] Kuntz and Kerper: Proc. Soc. Exper. Biol. & Med. **22:** 23, 1924.

[8] Garven, H. S. D.: Brain **48:** 380 (Sept.) 1925.

[9] Langley, J N.: The Autonomic Nervous System, Cambridge, Heffer & Co., 1921.

Therefore, in spite of evident contradictory facts and from purely histologic evidence based on studies of sections stained by the silver impregnation methods, it is probable that all striated muscle contains two types of nerve fiber endings. The larger medullated fibers are those derived from the cerebrospinal system; while the smaller, unmyelinated fibers which end in rings, loops or nets either within the sarcoplasm of a typical end plate, or as small independent end plates, are derived from the sympathetic nervous system. However, these facts afford no conclusive evidence of the function of these fibers.

On the basis of these facts, Hunter and Royle[10] formulated the hypothesis that there are two groups of muscle fibers with distinct motor innervation and separate and specific function. They stated that the cerebrospinal motor nerve endings were concerned in ordinary muscle movements and with a component of muscle tone which they termed "contractile." They believed the sympathetic or nonmedullated nerve endings to be related to the maintenance of a second element of muscle tone, the so-called plastic tone, which is enormously increased in spastic extremities.

COMPONENTS OF MUSCLE TONE

Based on Boeke's histologic work, Langelaan[11] proposed that each skeletal muscle fiber has a dual function as well as a dual structure. He predicated the existence of a sarcoplasm innervated by the sympathetic system. In this mass lies the striated tissue, which receives its innervation from the cerebrospinal nervous system. As a corollary, he divided muscle tone into a plastic element dependent on the sarcoplasm and its sympathetic innervation, and a contractile component affected by the striated apparatus and innervated by the cerebrospinal nerves. Langelaan attempted experimentally to demonstrate the presence of these two types of muscle tone. He measured the elasticity and plasticity of muscle and pointed out the differences in the two kinds of muscular activity. Forbes[12] has aptly stated that such differences may result from the various ways in which muscle fibers contract in different types of reflexes, and it need not necessarily be assumed that there are two types of muscle tone. Hunter and Royle differed somewhat from Langelaan in that they believed that, instead of one muscle fiber subserving two elements of tone, there are two sets of muscle fibers within any given muscle. The one initiates contractile tone and receives its innervation from the cerebrospinal system, and the second set of fibers serve for plastic tone and are innervated by the sympathetic nervous system. They have interpreted plastic tone as that element which is inhibited during movement and which in a normal muscle maintains an attitude against gravity. It follows that when plastic tone is abolished, the limb passively assumes an attitude determined by gravity, and when increased, as in spasticity, the limb tends to maintain any given position imposed on it during an exhibition of contractile tone. Carrying this idea to the decerebrated animal, they have stated that the extended position of the extremities assumed following decerebration is an evidence of contractile tone, while the maintenance of that posture is the function of plastic tone.

It will be apparent at once that such a theory of muscle tone is in direct opposition to Sherrington's conception of tone as a reflex reaction, the stimulus for which comes from a proprioceptive source and the purpose of which is to maintain posture. Sherrington believed that there are two reflex pathways concerned in the innervation of striated muscle. The one has to do with initiating and regulating the state of tension within the muscle itself, the reflex reactions of which are tonic in character. Stimulation of the second, or phasic, reflex pathway results in reactions that are a series of repeated but short-lived movements. Both the tonic and the phasic pathways are acted on by the cerebral motor cortex, and both employ the striated muscle and the neurons of the anterior horn cells of the spinal cord as the single effector mechanism. The extensor groups of muscles are mainly concerned in the effector side of the tonic reflex pathway, and the state of muscle tone resulting affords the basis for posture. The stimuli necessary to produce an adequate reaction from this reflex arc arise within the muscle iself and within the otolith organs of the labyrinths and in proprioceptive centers in the entire body musculature. The effective stimulus for the proprioceptive center is muscle stretching, while a change in the relation of the otolith organs to the horizontal plane in space acts as the adequate stimulus. In contrast, the phasic reflex arc employs flexor groups of muscles. The centers for the phasic system lie in the spinal cord, whereas centers in the brain stem govern the tonic pathway. It is clear that there must be perfect harmony and coordination between these two reflex systems governing muscle tone. Without this complemental cooperation, smoothly coordinated muscular movements would be lacking. It is this phase of the subject to which Sherrington's theory of reciprocal innervation applies.

It is obvious that the hypothesis formulated by Langelaan, Hunter and Royle radically breaks away from many well proved and established physiologic facts in regard to muscle tone. Incontrovertible evidence must be given before such a theory can be accepted in whole and applied clinically.

EXPERIMENTAL EVIDENCE

Since they believed that plastic and contractile tone are innervated by separate systems, Royle and Hunter attempted experimentally to isolate these functional elements. They removed the lumbar sympathetic rami on one side of a goat, and after a considerable interval performed decerebration by the usual guillotine method, which, as is well known, is accompanied by considerable hemorrhage, shock and inaccuracy in determining the exact level of decerebration. They found that under such experimental conditions the limb so denervated fell into an abducted, semiflexed attitude, while on the unaffected side extensor rigidity was marked. This result was explained as due to a loss of plastic tone. The second type of experiment performed by these authors consisted in an endeavor to isolate plastic tone. They used the fowl as an experimental animal because of the anatomic separation of the cerebrospinal and sympathetic innervation to the wings. They severed the cervical posterior roots, thus leaving the sympathetic supply intact and consequently assumed they had removed contractile tone and had retained plastic tone.

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[10] Royle, N. D.: M. J. Australia **1**: 77 (Jan. 26) 1924. Hunter, J. I.: Ibid **1**: 86 (Jan. 26), 581, 590 (June 14) 1924.

[11] Langelaan, J. W.: Brain **38**: 325, 1915; **45**: 434, 1922.

[12] Forbes, Alexander, in discussion on Crothers, Bronson: Cases Treated by Sympathetic Ramisection, Arch. Neurol. & Psychiat. **13**: 639 (May) 1925.

Trendelenburg[13] has recorded careful experiments of a similar nature. This investigator carried out very thorough anatomic and histologic controls on his birds after they had been killed. He performed extensive divisions of the cervical and thoracic posterior roots, which of necessity removed both somatic and sympathetic efferent innervation. Trendelenburg concluded that such denervation of a single wing produced no drooping or loss of voluntary or reflex movements. The most common and logical objection offered to Royle and Hunter's work is that in all probability they produced injury to the ventral as well as to the posterior roots.

With Pollock,[14] we repeated the work of Royle and Hunter with respect to the influence of sympathetic denervation on the pattern of decerebrate rigidity. Cats were employed as experimental animals. Hunter regarded the cat as an unsuitable animal for the investigation of problems of tone, on the ground that the variability of contractile tone masked the loss of plastic tone. This animal in Sherrington's and Magnus and de Kleijn's hands has proved to be of great value in working out just such problems. Eighteen animals were operated on and were kept under observation for periods of from two to nine weeks. No changes in the character of voluntary or reflex movements were observed. Twelve cats were decerebrated by ligation of the basilar artery at a selected level and simultaneous ligation of the common carotids. The fact that animals so operated on present active Magnus and de Kleijn phenomena forty-eight hours after ligation precludes the objection of a hypertonus due to asphyxial spasm. In all these animals the onset and maintenance of decerebrate rigidity was exactly similar in all four extremities, including the one previously deprived of its sympathetic innervation. Other workers, including Cobb,[15] Barenne,[16] Kuno,[17] Lopez,[18] von Bruck,[18] von Rijnberk[19] and Towers,[20] arrived at a similar conclusion; namely, that normal muscle tone and the pattern of decerebrate rigidity do not depend on sympathetic innervation.

Recently Ranson[21] has applied continuously a solution of nicotine to the posterior roots and spinal ganglions of a cat after the onset and maintenance of decerebrate rigidity. He noted that the rigidity in the corresponding limb disappeared within ten minutes, although the reflex activity remained. He believes that the impulses responsible for plastic tone pass through synapses of a sympathetic character in the spinal ganglions; that is, through the pericellular nerve networks which surround spinal ganglion cells. This would mean that such impulses are relayed to the muscles, as vasodilator impulses are to the skin, by sensory fibers acting antidromically or by true postganglionic fibers.

CLINICAL EVIDENCE

Many difficulties have arisen in the experimental identification and isolation of contractile and plastic tone. It is obvious that a like difficulty is present if we attempt to say from clinical examination that in one case plastic tone is increased and in another it is decreased. The lack of any standard of comparison or precise method of measurement adds to the confusion.

Hunter and Royle applied their theories of tone to selected cases of spastic paralysis and suggested sympathetic ramisectomy to relieve these patients of the presence of excessive plastic tone. They pointed out certain criteria which should be observed in the selection of cases suitable for operation. Preferably these methods to detect increase of plastic tone should be available at the bedside and should be easily applied. The increase of resistance of the muscles to passive movements, the "hung-up" or steplike tendon reflex, and the presence of sufficient mentality to carry out a program of reeducation are the main indications given by these authors.

After considerable clinical and operative work, Hunter and Royle stated that patients with an increase in plastic tone as the result of paralysis agitans, postencephalitic Parkinson's disease and degenerative or traumatic lesions of the spinal cord were unsuitable for operation. Consequently, they confined their attention to cases of Little's disease, traumatic cerebral cortical lesions and vascular cortical lesions. They have reported definite improvement in such patients after removal of the sympathetic rami.

With Pollock, we have performed ramisectomy and in some cases have completely removed the sympathetic chains in the cervical or lumbar regions, in cases of paralysis agitans, postencephalitic Parkinson's disease, spinal lateral sclerosis, cerebral hemiplegia, Little's disease and spastic paraplegia in extension from a traumatic spinal cord lesion. All these patients were normal mentally and had sufficient cerebral motor control to justify a removal of plastic tone. Careful kymographic and electromyographic records of reflex and voluntary actions and response to faradic stimulation were taken before and after operation. We also made complete roentgen-ray studies to determine the effect of interruption of the abdominal sympathetic trunk on the movements of the gastro-intestinal tract. Motion pictures of the gait, range of active movements, resistance to passive movements and reflexes were made of each of the patients. All the patients exhibited shortening and lengthening reactions on reflex stimulation. The tendon reflexes showed a "hung-up" characteristic; some patients, of course exhibited this more than others.

In our operations we employed several means of approach. We removed the entire cervical sympathetic trunk and its ganglions, including the stellate ganglion; we removed the latter alone and we have removed the abdominal sympathetic trunk on one or both sides from the second lumbar ganglion to and including the fourth lumbar ganglion. We have performed the latter operation both by the lumbar approach advocated by Royle and through a midline abdominal incision.

In order that we might properly evaluate the effects of sympathectomy, we purposely refrained from suggesting to the patient that he might be improved. We did not institute physiotherapy until a reasonable time had elapsed after operation, so that any results obtained could be ascribed alone to the surgical procedure.

We have given elsewhere the graphic records and results of our operations in these cases. We have examined them again eighteen months after operation, and our findings confirm our original conclusions. We are agreed with Hunter and Royle that no benefit from such an [illegible] results in cases of paralysis agitans, [illegible] rkinson's disease and degenerative or traumatic lesions of the spinal cord. We must also add that we have been unable to observe or record any improvement in the cases of Little's disease or cerebral hemiplegia due to a vascular lesion. Consequently, our conclusions have been entirely negative and have failed completely to offer any confirmation of Royle and Hunter's work.

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[13] Trendelenburg, W.: Arch. f. Anat. u. Physiol. (physiol. sect.) **1**, 1906.

[14] Kanavel, A. B.; Pollock, L. J., and Davis, Loyal: Relation of the Sympathetic Nervous System to Muscle Tone, Arch. Neurol. & Psychiat. **13**: 197 (Feb.) 1925.

[15] Cobb, S.: Am. J. Physiol. **46**: 478 (July) 1918.

[16] Barenne, J. G.: Arch. f. d. ges. Physiol. **166**: 145, 1916.

[17] Kuno, Y.: J. Physiol. **49**: 138, 1915.

[18] Lopez and von Bruck: Arch. f. d. ges. Physiol. **166**: 55, 1916.

[19] Von Rijnberk: Arch. de Physiol. **1**: 702, 1916.

[20] Towers, S.: Personal communication to the authors.

[21] Ranson, S. W.: Personal communication to the authors.

COMMENT

Tone is a property of muscle, the components of which are today incompletely known and the physiology of which is poorly understood.

Three mechanisms may be accepted as being concerned in hypertonicity: the corticospinal tract, the extrapyramidal system, represented largely by the striate body, and the brain stem mechanism. It may be possible that a fourth mechanism may play a considerable part; namely, cerebellar cocontraction. Finally, there may be some peripheral mechanism of muscle metabolism, related to tone and particularly active in such diseases as tetany, in which condition muscular cramps, changes in electric excitability and irritability of muscles are found.

It has been suggested that that element of muscle tone which is related to the postural, in contradistinction to the kinetic, system is mediated by the sympathetic nervous system through a high reflex arc in the pons and a lower one in the cord. The afferent and efferent limbs of the lower arc would arise and terminate in the sarcoplasm of skeletal muscle. It would seem to be unreasonable to assume that such a reflex pathway would serve all of the functional mechanisms just mentioned. If it be true, then sympathectomy should abolish that tone which in spasticity is due to hyperactivity of postural tone. It has been stated that this type of tone may be recognized by characteristics which were described by Sherrington as the plastic tone found in decerebrate animals and which are present in all cases of hemiplegia, cerebral diplegia of pyramidal tract origin and paraplegia in extension. We have been unable to record any graphic changes in the condition of muscle tone in any of the clinical lesions mentioned above, following removal of the sympathetic innervation to an extremity. We have also been unable to record or observe any changes in the spasticity produced by the release of function in striatal disease or in traumatic or degenerative lesions of the spinal cord which have for the most part involved the lateral pyramidal tracts.

If hypertonicity is the result of removal of the inhibition of corticospinal influences alone or in combination with hopothetic cerebral sympathetic fibers, it seems strange that complete removal of the brain cephalad to the red nucleus does not produce spasticity in animals. If, on the other hand, hypertonicity is due alone to removal of the influences of the corticospinal tract and the upper levels of a sympathetic reflex arc, it is difficult to explain why complete section of the spinal cord fails to produce spasticity. It cannot be because of spinal shock or diaschisis because of the existence of mass reflexes in a so-called isolated segment of the cord. It would seem that a large amount of investigation is necessary to show why incomplete lesions do, and complete lesions, with the exception of those in the brain stem, do not produce hypertonicity. If there are a number of factors concerned with increase of tone, then it is necessary quantitatively to measure the diminution of tone, if any, that results from removal of the sympathetic nerve supply. This is necessary to obviate the inaccurate interpretation of any clinical improvement as due to lessened muscle tone, when other factors may be involved. We feel that changes in muscle tone cannot be determined by the ordinary clinical examination, by the statements of patients or even by clinical results which have before been produced by hope and reeducation. It must be demonstrated by careful physiologic research and objective measurement that certain changes have occurred.

It is possible that the sympathetic nervous system may have some function relating to muscle tone; or, better, it may have some function dealing with the metabolism of muscles so that under certain conditions the contractility of a muscle may be changed by the removal of sympathetic impulses. Such a function may deal with colloidal chemistry. It may be that the increased vascularity that follows sympathectomy may influence the quality of muscle tone. It may also be possible that, because of modified metabolism or circulation, the character of the afferent impulses from muscles is changed; as an example, the occurrence of pain in an anemic muscle. As Pollock has suggested, it may further be possible that certain apparent changes in range of motion may be due to vasodilatation in the synovial membrane and a concomitant increase in secretion of synovial fluid. Under any of these conditions, the changes produced by sympathectomy will probably be found to be temporary, as are the vasomotor skin changes.

CONCLUSIONS

1. Histologic evidence points to the dual innervation of skeletal muscle from the cerebrospinal and sympathetic nervous systems.
2. Experimental removal of the sympathetic trunks in cats produces no effect on normal tone that can be observed or recorded.
3. The onset and maintenance of decerebrate rigidity in cats is unchanged after the removal of the sympathetic innervation to an extremity. With the exception of Royle's work on goats, the evidence in the literature is in agreement on this point.
4. The problem of muscle tone is extremely complicated, and one or all of several mechanisms may be responsible for changes in muscle tone. At present there is no accurate clinical method for measuring changes in muscle tone. Lengthening and shortening reactions and "hung-up" reflexes alone are insufficient indications for operation.
5. Kymographic tracings of tendon reflexes, faradic stimulation, active and passive motions and tremors before and after removal of the sympathetic nerve supply have shown no change in cases of paralysis agitans; postencephalitic Parkinson's disease; system degenerations of the spinal cord, such as lateral sclerosis; traumatic lesions of the spinal cord; cerebral hemiplegia, and Little's disease.
6. The sympathetic nervous system may have some function dealing with the metabolism of muscle, so that under certain conditions the contractility of a muscle may be changed by the removal of sympathetic impulses. Such a function would probably be chemical in nature.

54 East Erie Street.

[EDITORIAL NOTE.—This paper, together with the papers by Drs. Forbes and Cobb, and by Dr. Ranson, which precede it, constitute part of a symposium on "Sympathectomy." The concluding two papers, by Drs. McNealy and Cutler, respectively, together with the discussion, will be published in the next issue of THE JOURNAL.]

Trendelenburg[13] has recorded careful experiments of a similar nature. This investigator carried out very thorough anatomic and histologic controls on his birds after they had been killed. He performed extensive divisions of the cervical and thoracic posterior roots, which of necessity removed both somatic and sympathetic efferent innervation. Trendelenburg concluded that such denervation of a single wing produced no drooping or loss of voluntary or reflex movements. The most common and logical objection offered to Royle and Hunter's work is that in all probability they produced injury to the ventral as well as to the posterior roots.

With Pollock,[14] we repeated the work of Royle and Hunter with respect to the influence of sympathetic denervation on the pattern of decerebrate rigidity. Cats were employed as experimental animals. Hunter regarded the cat as an unsuitable animal for the investigation of problems of tone, on the ground that the variability of contractile tone masked the loss of plastic tone. This animal in Sherrington's and Magnus and de Kleijn's hands has proved to be of great value in working out just such problems. Eighteen animals were operated on and were kept under observation for periods of from two to nine weeks. No changes in the character of voluntary or reflex movements were observed. Twelve cats were decerebrated by ligation of the basilar artery at a selected level and simultaneous ligation of the common carotids. The fact that animals so operated on present active Magnus and de Kleijn phenomena forty-eight hours after ligation precludes the objection of a hypertonus due to asphyxial spasm. In all these animals the onset and maintenance of decerebrate rigidity was exactly similar in all four extremities, including the one previously deprived of its sympathetic innervation. Other workers, including Cobb,[15] Barenne,[16] Kuno,[17] Lopez,[18] von Bruck,[18] von Rijnberk[19] and Towers,[20] arrived at a similar conclusion; namely, that normal muscle tone and the pattern of decerebrate rigidity do not depend on sympathetic innervation.

Recently Ranson[21] has applied continuously a solution of nicotine to the posterior roots and spinal ganglions of a cat after the onset and maintenance of decerebrate rigidity. He noted that the rigidity in the corresponding limb disappeared within ten minutes, although the reflex activity remained. He believes that the impulses responsible for plastic tone pass through synapses of a sympathetic character in the spinal ganglions; that is, through the pericellular nerve networks which surround spinal ganglion cells. This would mean that such impulses are relayed to the muscles, as vasodilator impulses are to the skin, by sensory fibers acting antidromically or by true postganglionic fibers.

CLINICAL EVIDENCE

Many difficulties have arisen in the experimental identification and isolation of contractile and plastic tone. It is obvious that a like difficulty is present if we attempt to say from clinical examination that in one case plastic tone is increased and in another it is decreased. The lack of any standard of comparison or precise method of measurement adds to the confusion.

Hunter and Royle applied their theories of tone to selected cases of spastic paralysis and suggested sympathetic ramisectomy to relieve these patients of the presence of excessive plastic tone. They pointed out certain criteria which should be observed in the selection of cases suitable for operation. Preferably these methods to detect increase of plastic tone should be available at the bedside and should be easily applied. The increase of resistance of the muscles to passive movements, the "hung-up" or steplike tendon reflex, and the presence of sufficient mentality to carry out a program of reeducation are the main indications given by these authors.

After considerable clinical and operative work, Hunter and Royle stated that patients with an increase in plastic tone as the result of paralysis agitans, postencephalitic Parkinson's disease and degenerative or traumatic lesions of the spinal cord were unsuitable for operation. Consequently, they confined their attention to cases of Little's disease, traumatic cerebral cortical lesions and vascular cortical lesions. They have reported definite improvement in such patients after removal of the sympathetic rami.

With Pollock, we have performed ramisectomy and in some cases have completely removed the sympathetic chains in the cervical or lumbar regions, in cases of paralysis agitans, postencephalitic Parkinson's disease, spinal lateral sclerosis, cerebral hemiplegia, Little's disease and spastic paraplegia in extension from a traumatic spinal cord lesion. All these patients were normal mentally and had sufficient cerebral motor control to justify a removal of plastic tone. Careful kymographic and electromyographic records of reflex and voluntary actions and response to faradic stimulation were taken before and after operation. We also made complete roentgen-ray studies to determine the effect of interruption of the abdominal sympathetic trunk on the movements of the gastro-intestinal tract. Motion pictures of the gait, range of active movements, resistance to passive movements and reflexes were made of each of the patients. All the patients exhibited shortening and lengthening reactions on reflex stimulation. The tendon reflexes showed a "hung-up" characteristic; some patients, of course exhibited this more than others.

In our operations we employed several means of approach. We removed the entire cervical sympathetic trunk and its ganglions, including the stellate ganglion; we removed the latter alone and we have removed the abdominal sympathetic trunk on one or both sides from the second lumbar ganglion to and including the fourth lumbar ganglion. We have performed the latter operation both by the lumbar approach advocated by Royle and through a midline abdominal incision.

In order that we might properly evaluate the effects of sympathectomy, we purposely refrained from suggesting to the patient that he might be improved. We did not institute physiotherapy until a reasonable time had elapsed after operation, so that any results obtained could be ascribed alone to the surgical procedure.

We have given elsewhere the graphic records and results of our operations in these cases. We have examined them again eighteen months after operation, and our findings confirm our original conclusions. We are agreed with Hunter and Royle that no benefit from such an operative procedure results in cases of paralysis agitans, postencephalitic Parkinson's disease and degenerative or traumatic lesions of the spinal cord. We must also add that we have been unable to observe or record any improvement in the cases of Little's disease or cerebral hemiplegia due to a vascular lesion. Consequently, our conclusions have been entirely negative and have failed completely to offer any confirmation of Royle and Hunter's work.

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[13] Trendelenburg, W.: Arch. f. Anat. u. Physiol. (physiol. sect.) **1**, 1906.

[14] Kanavel, A. B.; Pollock, L. J., and Davis, Loyal: Relation of the Sympathetic Nervous System to Muscle Tone, Arch. Neurol. & Psychiat. **13**: 197 (Feb.) 1925.

[15] Cobb, S.: Am. J. Physiol. **46**: 478 (July) 1918.

[16] Barenne, J. G.: Arch. f. d. ges. Physiol. **166**: 145, 1916.

[17] Kuno, Y.: J. Physiol. **49**: 138, 1915.

[18] Lopez and von Bruck: Arch. f. d. ges. Physiol. **166**: 55, 1916.

[19] Von Rijnberk: Arch. de Physiol. **1**: 702, 1916.

[20] Towers, S.: *Personal communication to the authors.*

[21] Ranson, S. W.: Personal communication to the authors.

COMMENT

Tone is a property of muscle, the components of which are today incompletely known and the physiology of which is poorly understood.

Three mechanisms may be accepted as being concerned in hypertonicity: the corticospinal tract, the extrapyramidal system, represented largely by the striate body, and the brain stem mechanism. It may be possible that a fourth mechanism may play a considerable part; namely, cerebellar cocontraction. Finally, there may be some peripheral mechanism of muscle metabolism, related to tone and particularly active in such diseases as tetany, in which condition muscular cramps, changes in electric excitability and irritability of muscles are found.

It has been suggested that that element of muscle tone which is related to the postural, in contradistinction to the kinetic, system is mediated by the sympathetic nervous system through a high reflex arc in the pons and a lower one in the cord. The afferent and efferent limbs of the lower arc would arise and terminate in the sarcoplasm of skeletal muscle. It would seem to be unreasonable to assume that such a reflex pathway would serve all of the functional mechanisms just mentioned. If it be true, then sympathectomy should abolish that tone which in spasticity is due to hyperactivity of postural tone. It has been stated that this type of tone may be recognized by characteristics which were described by Sherrington as the plastic tone found in decerebrate animals and which are present in all cases of hemiplegia, cerebral diplegia of pyramidal tract origin and paraplegia in extension. We have been unable to record any graphic changes in the condition of muscle tone in any of the clinical lesions mentioned above, following removal of the sympathetic innervation to an extremity. We have also been unable to record or observe any changes in the spasticity produced by the release of function in striatal disease or in traumatic or degenerative lesions of the spinal cord which have for the most part involved the lateral pyramidal tracts.

If hypertonicity is the result of removal of the inhibition of corticospinal influences alone or in combination with hopothetic cerebral sympathetic fibers, it seems strange that complete removal of the brain cephalad to the red nucleus does not produce spasticity in animals. If, on the other hand, hypertonicity is due alone to removal of the influences of the corticospinal tract and the upper levels of a sympathetic reflex arc, it is difficult to explain why complete section of the spinal cord fails to produce spasticity. It cannot be because of spinal shock or diaschisis because of the existence of mass reflexes in a so-called isolated segment of the cord. It would seem that a large amount of investigation is necessary to show why incomplete lesions do, and complete lesions, with the exception of those in the brain stem, do not produce hypertonicity. If there are a number of factors concerned with increase of tone, then it is necessary quantitatively to measure the diminution of tone, if any, that results from removal of the sympathetic nerve supply. This is necessary to obviate the inaccurate interpretation of any clinical improvement as due to lessened muscle tone, when other factors may be involved. We feel that changes in muscle tone cannot be determined by the ordinary clinical examination, by the statements of patients or even by clinical results which have before been produced by hope and reeducation. It must be demonstrated by careful physiologic research and objective measurement that certain changes have occurred.

It is possible that the sympathetic nervous system may have some function relating to muscle tone; or, better, it may have some function dealing with the metabolism of muscles so that under certain conditions the contractility of a muscle may be changed by the removal of sympathetic impulses. Such a function may deal with colloidal chemistry. It may be that the increased vascularity that follows sympathectomy may influence the quality of muscle tone. It may also be possible that, because of modified metabolism or circulation, the character of the afferent impulses from muscles is changed; as an example, the occurrence of pain in an anemic muscle. As Pollock has suggested, it may further be possible that certain apparent changes in range of motion may be due to vasodilatation in the synovial membrane and a concomitant increase in secretion of synovial fluid. Under any of these conditions, the changes produced by sympathectomy will probably be found to be temporary, as are the vasomotor skin changes.

CONCLUSIONS

1. Histologic evidence points to the dual innervation of skeletal muscle from the cerebrospinal and sympathetic nervous systems.
2. Experimental removal of the sympathetic trunks in cats produces no effect on normal tone that can be observed or recorded.
3. The onset and maintenance of decerebrate rigidity in cats is unchanged after the removal of the sympathetic innervation to an extremity. With the exception of Royle's work on goats, the evidence in the literature is in agreement on this point.
4. The problem of muscle tone is extremely complicated, and one or all of several mechanisms may be responsible for changes in muscle tone. At present there is no accurate clinical method for measuring changes in muscle tone. Lengthening and shortening reactions and "hung-up" reflexes alone are insufficient indications for operation.
5. Kymographic tracings of tendon reflexes, faradic stimulation, active and passive motions and tremors before and after removal of the sympathetic nerve supply have shown no change in cases of paralysis agitans; postencephalitic Parkinson's disease; system degenerations of the spinal cord, such as lateral sclerosis; traumatic lesions of the spinal cord; cerebral hemiplegia, and Little's disease.
6. The sympathetic nervous system may have some function dealing with the metabolism of muscle, so that under certain conditions the contractility of a muscle may be changed by the removal of sympathetic impulses. Such a function would probably be chemical in nature.

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ARACHNIDISM

A STUDY IN SPIDER POISONING *

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The popular belief that spider bites are poisonous has found little support in scientific writings. Entomologists and arachnologists have been almost unanimous in asserting the innocuous nature of spiders, and medical men have been accused of unscientific readiness to accept popular reports without attempting to establish the truth or falsity of the facts claimed. A spider bite, as any other wound, may easily become infected; thus, definite cases of tetanus, anthrax, erysipelas, cellulitis and septicemia, proved at necropsy and by bacteriologic examinations, have been reported as arising from spider bites by Lawrence, Garcia, Wight, Davison and Presley. Moreover, the very measures adopted for the treatment of a spider bite may in themselves be the cause of many of the symptoms reported, as the local sloughs following the injection of ammonia water or the application of caustics, or the symptoms of intoxication following the free imbibition of "stimulants." The possibility of coincidence must also be borne in mind, and the relationship between a spider bite and a subsequent pathologic condition cannot be determined solely by a "post hoc, ergo propter hoc" reasoning in a single case.

Nevertheless, the almost universal belief in the poisonousness of spider bites among peoples separated by every difference in longitude and civilization, and the persistent reports of serious results from spider bites, are not entirely lacking in foundation. The large, hairy tarantula is, to the lay mind, the most dangerous of the poisonous varieties, although authentic cases only partially support its terrible reputation.

There is abundant evidence that the bite of the shiny black *Latrodectus* is attended with severe systemic poisoning. Virtual epidemics of arachnidism from the bite of *Latrodectus malmignatus* were reported in Spain in 1830, 1833, and 1841, and similar cases have since been described by many observers in France, Italy and Corsica. Other epidemics due to *Latrodectus karakurt* were reported from the Russian provinces of the Kirghiz Steppes in which animals as well as human beings were the victims. More than a dozen writers have recorded severe consequences from the bite of *Latrodectus scelio*, the "katipo" of New Zealand and Australia, and from the "mena vodi" of Madagascar. In South America, clinical and laboratory reports from more than thirty authors have established spider bite poisoning as a clinical entity. During the last hundred years more than 150 cases of poisonous spider bites have been reported by thirty-three physicians in the United States, and fifteen cases of this malady have been studied at the Los Angeles General Hospital during the last decade.

LATRODECTUS MACTANS

Latrodectus mactans is probably the only poisonous spider in the United States. Besides its many scientific synonyms, it has many popular nicknames, as the "black widow," the "shoe-button" spider, the "hourglass" spider, the "T dot" spider, and the "po-ko-moo." It is a shiny, coal-black spider, usually brilliantly marked with red or yellow or both. The markings vary greatly, the most constant being a bright red patch, shaped somewhat like an hourglass, on the ventral surface of the abdomen. The female, which is always the one responsible for the bites reported, is often half an inch in length when fully grown, and may stretch its long, glossy legs over a spread of as much as 2 inches. The globose abdomen, somewhat larger than the cephalothorax, resembles a black shoe button, although it may have one or more red spots along the middle of the back, and over the spinnerets, in addition to the large ventral patch. The male is much smaller than the female, and is even more conspicuously marked, having, in addition to the marks of the female, four pairs of stripes along the sides of the abdomen. The young spiders are much lighter in color, and gradually don the glossy black coat in a series of molts during a period of about forty days.

Previous studies of spider poison are highly conflicting and confusing. We have repeated many of the reported experiments with *Latrodectus mactans.* Macerated suspensions of the spider failed to show any hemolytic power in vitro, and were without effect when injected. The bite of the spider, however, produced in young white rats severe symptoms often leading to death.

The black widow, so called from the custom of eating its mate, builds its coarse and irregular dark web in dimly lighted places where it may be undisturbed. Occasionally it is found under stones or pieces of wood, or in holes in the ground, in old stumps or in bushes, more often in the rafters and corners, under the floors and in the attics of little used frame houses, and in the dark corners of barns and other outbuildings, and it has been frequently seen in outdoor privies, where it often builds its web across the seat of the toilet. Although it is encountered mainly in the southern half of the United States, from the Atlantic to the Pacific coast, specimens have been reported also from such Northern states as New Hampshire, Pennsylvania and Ohio.

REVIEW OF ONE HUNDRED AND FIFTY CASES PREVIOUSLY REPORTED

More than two thirds of the reported cases of spider bite poisoning occurred in California, but cases were reported from more than a dozen other states. Most of the victims were males, and the majority were bitten on the penis or adjacent parts while sitting in an outdoor privy. The spider was caught and positively identified in only a dozen cases, but the description of it as a black spider, and the frequent mention of the red spot on the abdomen leaves little room for doubt of the species in most of the others. A stinging or sticking sensation was noted at the time of the bite, but this soon disappeared, and except for a tiny red spot sometimes reported, there was no mark or swelling to indicate the site of the bite. Acute pain, however, was present in some form in every case. It appeared in from a quarter to a half an hour, reached its acme in less than two hours, and persisted for more than six hours undiminished, then subsided in the course of a day or two, but did not disappear for several days, and was variously described as severe, intense, aching, agonizing, excruciating and paroxysmal. The pain spread from the region of the bite by contiguity; thus, the patients bitten on the penis generally had pain in the groin and then in the abdomen and back, while those bitten on the wrist had pain in the arm and chest before it reached the abdomen. The final distribution of the pain, however, was fairly uniform, wherever the initial lesion might be, being most often localized in the abdomen and legs, frequently also in the back, chest, groins and hips, and "all over," and less often in the arms, shoulders and head.

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* Read before the Section on Pharmacology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

In addition to the acute pain, displayed in most cases by writhing, rolling, doubling up, muscle spasms and paroxysms, many other symptoms are enumerated, including, in the order of frequency, profuse cold perspiration, restlessness and anxiety, difficult breathing, nausea and anorexia, vomiting, constipation, cyanosis, delirium, prostration or shock, insomnia, disturbances of speech, acute urinary retention, paralyses, convulsions, localized swelling of the bitten part or other parts of the body, a macular skin eruption, chills, vertigo and jaundice. An extreme boardlike rigidity of the abdomen was the most striking physical finding, but abdominal tenderness was usually not mentioned. Tremors, muscle twitching and paresthesias were present in some cases, and priapism was occasionally observed. A slow pulse was noted in a number of cases, but a rapid one was just as common.

General weakness, numbness or tingling of the legs, or even actual bodily pains often remained throughout a long convalescence. Twelve deaths were reported; but only a few of them, as in the cases of Mr. Dick in North Carolina, Dr. Reese in Oklahoma, and Dr. Clark in California, have been described in detail. In the latter cases the symptoms appear to have been the usual ones, perhaps unusually severe, and death ensued in from fourteen to thirty-two hours.

Seldom in medicine will one find a greater diversity of treatment than in the recorded cases of spider bites. More than seventy-five different remedies have been administered for this condition, each with the greatest confidence that this was the line of treatment to give the patient the greatest benefit. The sheet anchors of therapy, however, have been morphine, whisky or brandy, ammonia water or spirit of ammonia, atropine, magnesium sulphate, hot baths and fomentations, enemas, bleeding, opium or laudanum, strychnine, camphor and potassium permanganate. Among other therapeutic measures administered were calomel, cantharides, catheterizations, castor oil, cocaine, arsenic, amber, antimony, acetylsalicylic acid, aconitine, belladonna, mercuric chloride, boneset, Dover's powders, Darby's fluid, echinacea, edgeweed, elaterium, glonoin, scopolamine, hoarhound, ipecac, lavender, mustard plasters, milk, magnesium phosphate, nitroglycerin, olive oil, potassium acetate, iodide and carbonate, phenol (carbolic acid), plantain, rue, quinine, sinapisms, spirits of turpentine, squirrel's ear, senna, sodium chloride, tansy, antimony and potassium tartrate, tobacco poultice, valerian, volatile liniment and Wizard Oil.

FIFTEEN ADDITIONAL CASES

The fifteen patients suffering from spider bite treated at the Los Angeles General Hospital were all males, ranging from 2 to 65 years of age. Most of the bites occurred after dark, in the late summer and early fall. Two thirds of the patients were bitten on the penis while sitting in an outdoor toilet. One or two tiny red spots were seen at the site of the bite in half of the cases, but these soon disappeared, and in no case was any swelling or inflammatory reaction manifested. Pain was in each instance the chief complaint, arising almost immediately in most cases and reaching its greatest severity in from one to two hours. It began to subside in from four to eight hours, but the severe symptoms were present for from twelve to twenty-four hours, and complete relief was not achieved for several days. The pain was described as acute, severe, continuous, cramping, throbbing or aching, sometimes sharp and sometimes dull, and was localized in the abdomen and legs in nearly all cases, but was also felt in the chest, arms, penis, groins, back and "all over" in many. Profuse perspiration, restlessness, nausea and vomiting, constipation, and rapid or difficult breathing were the chief symptoms noted, but vertigo, ataxia, chills, acute urinary retention, localized edema in the face or in the feet, and persistent hiccup were also recorded. On admission, the patients were writhing, tossing or moaning in the agony of pain. The abdomen was tense, with an extreme boardlike rigidity, but abdominal tenderness was noted in only three cases. The reflexes were increased in half the cases examined, especially the knee jerk, and tremors and muscle twitching were often present. Priapism was also noted.

Initial subnormal temperature followed by a mild fever was an almost constant feature in these cases, but in only one case did the temperature exceed 101 F. The pulse was generally slow as compared with the temperature, being below 66 in more than half of the patients at some time during their first days in the hospital. The respiration, however, was usually slightly accelerated on admission, but soon came down to a normal rate. The blood pressure was always elevated, averaging 150 mm. of mercury systolic with 87 mm. diastolic, but dropped rapidly on later readings. Leukocytosis was present in almost every case, averaging 14,800 in the cases examined on the first day in the hospital, the highest count being 21,800, but dropping to an average of 10,700 in the cases examined several days later, the lowest being 5,900. There was generally a relative polymorphonuclear leukocytosis, averaging 80 per cent in the cases recorded. The red blood count was variable, being often above normal, and the color index when calculated was about 1. Four of the patients in this series had positive Wassermann reactions. A trace of albumin and a few hyaline or granular casts were found in the urine in six cases, and blood was found in the urine in one. Almost all of the patients had obstinate constipation, causing them to go one or two days without a bowel movement while in the hospital, and two developed acute urinary retention, requiring catheterization.

TREATMENT

The treatment at the General Hospital has consisted mainly of (1) sedatives, such as morphine or codeine, which had to be given in larger doses than usual to secure results, bromides, chloral, barbital and hot applications; (2) stimulants, such as aromatic spirit of ammonia, caffeine and strychnine, and (3) eliminative measures, such as purgation with magnesium citrate or sulphate, castor oil or calomel, enemas, catheterization and gastric lavage.

Little is known about antibody formation to spider venom, but the experiments of Baerg and others indicate that one bite confers a degree of immunity, and so it was suggested that some form of specific serum treatment be attempted. Accordingly, 20 cc. of blood was taken from a patient who had recovered from a severe poisonous spider bite and injected intramuscularly into a man who had just entered the hospital in the agony of pain from a spider bite. Since he improved following the injection, the same procedure has been followed in three other cases since then, and in each instance relief was experienced in a much shorter time than would have been expected without such treatment. This was especially noted in the cases treated within a few hours after the bite was received. The results, while not conclusive, are sufficiently encouraging to warrant the continuation of the use of convalescent serum in every case that is admitted following a poisonous spider bite, and a supply of convalescent serum is now kept at the hospital for this purpose.

CONCLUSION

Arachnidism, or spider bite poisoning, presents a clinical entity so striking that the diagnosis should easily be made, once the possibility is considered. One hundred and fifty cases have previously been reported in the United States, and fifteen cases have been seen at the Los Angeles General Hospital; but undoubtedly many more cases occur and may even pass unrecognized. Constant findings in this condition are a history of a bite by a black spider, followed by excruciating pain, mainly in the legs and abdomen, extreme abdominal rigidity, high blood pressure, elevation of temperature and a polymorphonuclear leukocytosis. Large doses of opiates and the application of heat are our main symptomatic remedies, but convalescent serum seems to be of specific therapeutic value.

LOCAL ANESTHESIA IN THE REDUCTION OF FRACTURES *

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Since 1885, when Conway [1] first advocated the use of cocaine in the reduction of fractures and dislocations, the only reference to the subject in American medical writings is an article by Cumston,[2] in 1918. Conway reported three cases of Colles' fractures and one of posterior dislocation of both bones at the elbow reduced under local anesthesia. The European literature contains series of cases reported by various authors. Reclus,[3] in 1903, made use of the method to transport in comfort a patient with a fracture of the femur, and found that a half hour later the anesthesia was sufficient to allow of the reduction of the fracture. Lerda [4] reported thirty cases in 1907, and the following year Quenu [5] described its use in fifteen cases. Braun [6] detailed fifty cases in which he used local infiltration twenty-three times and either brachial or other forms of conduction anesthesia in the remainder. Both Dollinger [7] and Hagenbach [8] prefer conduction anesthesia by circular infiltration proximal to the site of fracture. Fulton,[9] a British surgeon, reported five cases in 1921. The most recent writer on the subject is Frostell,[10] who, in 1925, advocated the use of the method without giving any details. The method is described by Baun and by Hertzler in their books on local anesthesia, and is mentioned by Allen.

Since 1924, I have used local anesthesia in the reduction of fractures. The method employed has been one of local infiltration at the site of the break. It is obvious that anesthesia can be induced by spinal injection for the lower extremity, or by nerve block of the brachial plexus in the upper extremity. The possible dangers of these procedures outweigh any advantage gained over the use of a general anesthetic. In lesions of the phalanges, nerve block of the digital nerves may be used.

METHOD

Procaine solution, from 0.5 to 1 per cent strength, with epinephrine, is used. When it is obvious that a large amount of the solution will be needed, as in the thigh, the lesser strength is chosen. The site of the injection is over the seat of the fracture. Every effort is made to select a spot where the skin appears normal, and to avoid injecting through or into plainly devitalized tissues. A needle of sufficient length to reach the bone is required. The solution is injected between the fragments and about them, as well as into the surrounding muscles. It may be possible at times to complete the infiltration through one puncture, the needle being moved about in the tissues and left in situ while the syringe is refilled. Where there is considerable overriding of the fragments, it may be necessary to inject separately over each bone end. When two bones are broken, as in the leg and the forearm, two separate punctures are needed; and two punctures were found to be convenient in Colles' fractures and in fractures of the femur. The amount of the solution used has varied from 20 to 150 cc.; the latter amount was used in a fracture of the femur in a muscular man. It will be noted in some cases that, when the needle point lies between the bone fragments, blood will rise in the syringe from the site of the fracture. The color is lighter than that which would be obtained if the needle were in a vein. Further differentiation can be made by inserting or withdrawing the needle a short distance; if it is a vein, the blood will cease to well up, but the amount extravasated about the site of a fracture is usually sufficient to continue rising in the syringe.

INDICATIONS

Whenever a local anesthetic is the choice for a major surgical procedure, its use would be indicated in the treatment of fractures. Under such a heading would come the aged, and the patient with a decompensated heart or with pulmonary or renal disease. As an example:

> A woman was referred to me because of an impacted Colles' fracture. She had been under treatment for many years for hypertension, and a general anesthetic was contraindicated. An attempt at her home to correct the deformity without any anesthetic was unsuccessful. The following day, after the injection of 30 cc. of 0.5 per cent procaine, the fracture was reduced without any pain.

The majority of the fractures of the upper extremity are ambulant cases; they make up part of an office or outpatient rather than a hospital practice. It is in this type of fracture that local anesthesia will find its greatest field of usefulness, even though a general anesthetic is not contraindicated. In the following case a third indication can be seen:

> A child, aged 8, admitted to the hospital with a fracture of the skull and of the femur, was in severe shock for twelve hours, and the fractured leg was treated with a temporary splint. The following day, after local infiltration with procaine, the fracture was painlessly handled, and the possible dangers of a general anesthetic were avoided.

A fourth indication will be found in the following report:

> A woman, aged 60, came to the outpatient department complaining of pain in the shoulder following a fall the previous day. All attempts at examination were resisted by the patient,

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* The majority of the reported cases are from the hospital or outpatient service of Dr. Elsberg at the Mount Sinai Hospital.

1. Conway, J. R.: New York M. J. **42**: 632, 1885.
2. Cumston, C. G.: Internat. Clin. **4**: 213, 1918.
3. Reclus: L'anestésie localisée par la cocaine, Paris, 1903, p. 266.
4. Lerda, G.: Ztschr. f. Chir. **34**: 1417, 1907.
5. Quenu, E.: Bull. et. mém. Soc. de chir. **34**: 976, 1908.
6. Braun, H.: Deutsche med. Wchnschr. **39**: 17, 1913.
7. Dollinger, B.: Ztschr. f. Chir. **40**: 763, 1913.
8. Hagenbach, E.: Schweiz. med. Wchnschr. **51**: 488 (May 26) 1921.
9. Fulton, R. A. H.: Brit. M. J. **2**: 796 (Nov. 12) 1921.
10. Frostell, G.: Ztschr. f. Chir. **52**: 1308, 1925.

who cried out at the slightest touch. After the injection of 10 cc. of 1 per cent and 10 cc. of 0.5 per cent procaine in the region of the head of the humerus, a satisfactory examination was made. The patient had a fracture of the greater tuberosity.

A use of the procedure suggests itself, although I have not had occasion to employ it. A fracture could be anesthetized in the operating room, and the patient go a distance to the roentgen-ray department for reduction of the fracture under the fluoroscope. This would be preferable to the transportation of an unconscious patient or to the administration of a general anesthetic in the roentgen-ray department. The only occasion I have had to use local anesthesia in a dislocation was that of a muscular man seen in the accident ward of the hospital. The intern in charge had been unable to reduce a dislocated phalanx. I failed on my first attempt, but succeeded readily after blocking the digital nerves.

CONTRAINDICATIONS

The one true contraindication to the use of local injection at the site of fracture is a compound fracture. If it is badly compounded and soiled, local infiltration may well spread infection into the surrounding tissues. Even in cases which do not seem in need of operative intervention, infection may be present to show itself several days later. Until the use of local anesthesia is more common in the treatment of fractures, one would not care to have a suspicion arise that its use was a possible factor in the infection. Circular injections, well removed from the site of the lesion, could be used in this type of case. Objection may be raised to the local infiltration on the grounds that we are converting a simple into an open fracture and thus invite infection. With proper asepsis, I believe this objection is theoretical. I have not seen even the suggestion of any reaction from its use, and none has been reported by others in large series of cases. A second possible objection that may be raised is that proper muscular relaxation will not be obtained. I thought this was probably correct until I used the method in a young negro porter of powerful build, who had a fracture of the femur at the junction of the upper and the middle third. A reduction was readily carried out on a fracture table after the injection of 150 cc. of 0.5 per cent procaine. The only complaint of the patient was the pressure from the perineal bar. A third point which might be raised against the use of local anesthesia is the impracticability of using it in children. I have successfully used it in three children under 10 years of age, and feel that by gaining the confidence of the patient it can be used at any age. By freezing the skin, the first puncture can be made painless. This puncture and, at times, a feeling of tenseness of the tissues have been the only complaints.

Local anesthesia has been successfully used in the following thirteen cases: fracture of the shaft of the femur, 2; fracture of the shaft of the humerus, 1; fracture of the tuberosity of the humerus, 1; fracture of the clavicle, 1; fracture of both bones of the forearm, 1; fracture at the wrist, 3; old fracture of the carpus (refractured), 1; fracture of the tibia, 1; fracture of the tibia and fibula, 1, and dislocation of the phalanx, 1. This group, while not extensive, is fairly representative of the various types of fractures. A satisfactory anesthesia was obtained in every instance.

CONCLUSIONS

1. The induction of anesthesia in fractures by local infiltration is a practical procedure.
2. It is useful in patients in whom a general anesthetic is contraindicated, and is particularly recommended for the treatment of ambulant fractures.

4 East Ninety-Fifth Street.

A METHOD OF STRIPPING THE SEMINAL VESICLE

REPORT OF TWO HUNDRED CASES OF CHRONIC SEMINAL VESICULITIS

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Chronic seminal vesiculitis is characterized by a symptomatology that is somewhat underemphasized and often unrecognized.[1] For the sake of calling attention to the more important features, let us recall that there is very often pain in the lumbosacral region [2] or perineum, and down the legs or in the knees; the patient is often underweight, with sagging muscles and skin pallor, and has a constant sense of fatigue or tires easily. He has lowered vitality and mental depression. The rapidity with which the pain disappears with increase in weight back to normal, with which there occurs a good color return to the skin, and a general sense of well being, with increased vitality and subsidence of all other distressing symptoms after a few, from three to six, thorough massagings and strippings of the seminal vesicles, is remarkably striking.

Undoubtedly the seminal vesicle, which is a hollow organ, plays as important a rôle in harboring infection as the prostate,[3] if not more so; and, since it represents an important unit in the channel that conveys the very germinal cell of human life, this is all the more reason for keeping it free from pollution. Almost any one can reach up into the rectum and push on the readily felt prostate; but, unless one has a clear conception of the anatomic relationships of this region and the importance of the seminal vesicle in infections of the genital tract, one is apt to fail in getting a specimen of pus where plenty exists, to say nothing of the consequent failure to give relief by the expulsion of masses of pus therefrom that can be accomplished if the proper manipulation is employed in stripping them.

The seminal vesicles are reported to be from 4 to 5 cm. in length (Piersol); "sometimes much longer and relatively slender and at others short and broad, they vary greatly in size and in detail of arrangement of their component parts, and not infrequently are markedly asymmetrical." They are sacculated and tortuous, and while their position is relatively fixed they assume great variations of angulation from the midline of the rectum. As they are lateral and above the prostate, and since the average forefinger of a man reaches not far above the upper border of the prostate, and as the patient usually experiences much tenderness in this region, relaxing reluctantly, it is not surprising that it is often difficult to empty these organs efficaciously by maneuvers of the surgeon's finger in the patient's rectum.

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[1] Nielsen, J. M.: Retroperitoneal Pelvic Abscess in the Male, J. A. M. A. **86**:683 (March 6) 1926. Wesson, M. B.: Industrial Hernia Versus Seminal Vesiculitis and Vasitis, California & West. Med. **24**:212 (Feb.) 1926.

[2] Player, L. P.: The Prostate and Its Influence on Low Back Pain, California & West. Med. **23**:993 (Aug.) 1925.

[3] Boyd, M. L.: Method of Examining Secretions from Prostate, Seminal Vesicles and Ampulla of the Vasa, J. A. M. A. **82**:792 (March 8) 1924. Dillon, J. R.: Tuberculosis of the Seminal Tract, California & West. Med. **23**:1139 (Sept.) 1925.

METHOD OF STRIPPING

To examine properly and to strip a seminal vesicle the patient should be relaxed, and the urologist should be able to explore the male pelvis with his finger as thoroughly as the gynecologist explores that of the female. It can be done with a little anesthesia for the patient and with a willingness to push on the part of the searching fingers.

The method I have adopted is to cleanse the penis with tincture of green soap, wash the parts with mercuric chloride solution, wash out the urethra with boric acid solution, and then instill 10 cc. of sterile 1 per cent butyn through the urethra, up past the external sphincter into the prostatic urethra with an ordinary sterile urethral syringe. This is massaged well into this region by rubbing it along the urethra and perineum, and then a rectal suppository containing 2 grains (0.13 Gm.) of butyn is inserted into the rectum A few minutes are allowed to obtain good anesthesia, after which we find that the rectal muscles are usually well relaxed.

The patient is placed in the position most desired by the surgeon for massaging the glands (we prefer either the standing position with good flexion at the hips, or the knee-chest position on the examining table), and with the forefinger covered with a cot one finds that the finger can be pushed well up into the pelvis beyond the prostate; and, swinging over to one side, one usually has no difficulty in finding the seminal vesicle. Beginning as high as possible, the finger is brought down along this organ firmly with a rapid stroke, which is repeated in a series of rapid strokes with a milking motion for several seconds. Then, if any areas of induration are felt, a steady, firm continuous pressure downward is made on each of these for a few seconds. The same procedure is applied to the vesicle on the other side, and then the prostate is massaged in the customary manner. If there are any coagulated agglutinated masses of pus and detritus in these organs, they are brought down into the prostatic urethra where they lie, too heavy to pass through it until washed out by an irrigation, and are seen if collected in a sediment glass often in sufficient quantity to settle in several inches thickness at the bottom of the glass.

Following the stripping and massage, the deep urethra is instilled with mercurochrome-220 soluble, as suggested by Young.[4] From three to twelve of these treatments usually free these organs of the most important masses of pus, and only the usual seminal and prostatic fluids remain, which most often now unfortunately show an excess of leukocytes for a persistently long period.

These manipulations should be done with much care; and although some firm and considerable pressure is sometimes necessary to expel the infected material, it should be done with all precautions possible, and with a thorough knowledge of the anatomy of this region, with due respect to the sacral plexus of nerves, the body of the seminal vesicle itself and the wall of the rectum, to avoid injury to any of these or other adjacent structures.

In considering the 200 cases of chronic seminal vesiculitis in which treatment was done in this manner, we found that all the patients gave histories of gonorrheal infection of from four months to many years' standing, with "morning drops," recurrences of acute exacerbations of freely flowing pus from the urethra, local irritations, epididimytis, and the usual array of manifestations characteristic of this affection. Eighty-five per cent of the patients manifested symptoms of backache, loss of weight, lowered vitality and depression in varying degrees, and 15 per cent were practically free from all these symptoms except the "morning drop" or some local irritation. Under our management, in practically all cases the pus was reduced to a mere trace before cessation of treatment, most of them presenting great masses of pus at first in the massage secretions; in all the cases there was relief from distressing symptoms, and in most cases an increase in weight of from 5 to 25 pounds (2.3 to 11.3 Kg.) in from four weeks to twelve months. Ten per cent of the patients were freed from all traces of pus in from ten weeks to twelve months, and were discharged subject to periodic reexaminations. About half of these have reported over a probationary period of many months and were found to have remained clean. Eighty per cent voluntarily ceased to appear for treatment before complete disappearance of the last trace of pus, a few of these returning later at periods of from six months to a year again to resume treatment, some presenting a freshly acquired acute anterior urethritis either from an extraneous source or from their own deeper structures, but most of them precisely where they left off, with only a trace of pus on massaging. Ten per cent are still under treatment.

No patient has suffered any ill effects from a series of rather vigorous stripping of the seminal vesicles and massagings of the prostate gland, aside from minor aches along the vas deferens for a few hours afterward; in a few, slight bleeding from the rectum occurred and some experienced a degree of pain during the treatment in spite of the anesthesia. Twenty per cent suffered transient and unalarming dizziness or went into complete syncope with blanching of the skin and profuse sweating immediately after the massage, from which they promptly recovered. I believe that the reaction of syncope here is not psychic, and offer as possible explanations of its cause that it is either a sudden flooding of the system with toxins liberated by the massage, or that it is purely an autonomic nerve reflex receiving its stimulus in the sympathetic nerves of the stripped organ and manifesting itself in the activity of the vasoconstrictors of the brain and skin.

CONCLUSIONS

From a study of these cases, I feel that the importance of chronic seminal vesiculitis, and particularly in gonorrhea, has been underestimated; that the symptoms of this affection are underemphasized, as well as the readiness to which they respond with proper treatment; that with the help of even a mild anesthesia the parts become relaxed and treatment facilitated; that a quick, rapidly repeated milking motion applied to these vesicles is advantageous in emptying them; that careful strippings deliver the vesicles of masses of agglutinated pus, often hard and lumpy, which might otherwise never become dislodged, and that the phenomenon of syncope occurs in many cases immediately after a massage, particularly the initial one.

316 Judge Building.

Child Labor.—Children . . . play an important part in the production of tobacco in the United States, two disagreeable operations in its cultivation being considered in some areas distinctly children's work.—U. S. Department of Labor.

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[4] Young, H. H.: The Problem of Sterilizing the Urinary Tract, J. Urol. **15**: 11 (Jan.) 1926.

CHOLECYSTOGRAPHY: THE USE OF PHENOLTETRAIODOPHTHALEIN *

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In previous publications we[1] stated that observations were being made to determine whether or not phenoltetraiodophthalein would prove to have superior advantages over tetraiodophenolphthalein for purposes of cholecystography. It will be recalled that these two substances are isomeric compounds differing from each other in the location of the iodine atoms in the molecule. Phenoltetraiodophthalein also is characterized by its ability to stain the serum sufficiently to make it of use in determinations of hepatic function, for which purpose it has the same possibilities as phenoltetrachlorphthalein.

We have now given the sodium salt of phenoltetraiodophthalein intravenously to fifty patients. For purposes of intravenous use in cholecystography it seems to possess very decided advantages over anything else hitherto employed. Satisfactory shadows of the gallbladder can be obtained with smaller doses than with the isomeric compound, tetraiodophenolphthalein. Its use, therefore, is followed by fewer and much less severe toxic reactions, although within the last year these have been negligible with the tetraiodophenolphthalein. The toxicity of this whole group of substances seems to be due chiefly to the phenolphthalein part of the molecule, as judged by the fact that toxic effects can be produced by injections of phenolphthalein alone which are apparently identical with those produced by the halogenated phenolphthaleins. As an average intravenous dose, we have used the phenoltetraiodophthalein in amounts of 0.04 Gm. per kilogram. We have used amounts up to 2.5 Gm. for adults. We have not found it necessary to exceed that amount in any case, although it is conceivable that unusually large persons might require larger doses than this. For the sake of convenience we ordinarily give it in one dose dissolved in 30 cc. of freshly distilled water. In this way it may be given easily with a syringe. But if larger dilutions are desired it may be given by the gravity method. In the fifty cases there were three instances of slight dizziness of no more than ten minutes' duration. In the other cases there was no reaction of any kind. The fact that it gives satisfactory results in relatively small doses makes it possible also to make the injection all at one time without the same fear of toxic reactions as is the case if the larger dose of tetraiodophenolphthalein is given at one time. Likewise the danger of thrombophlebitis is reduced, and we have had no instances of this in our series of fifty cases. A final advantage lies in the fact that this substance seems to be more rapidly excreted through the liver, and accordingly the time necessary for a cholecystographic examination can therefore be shortened. Excellent shadows of the gallbladder may usually be obtained in four hours after the injection of the phenoltetraiodophthalein. The interpretation of cholecystograms produced by phenoltetraiodophthalein is the same as we originally described for the halogenated phenolphthaleins.

We have had only indifferent success with this substance when administered orally. In our experience the method of intravenous injection continues to give a diagnostic accuracy of 97 per cent, as compared with an accuracy of only about 75 per cent with the method of oral administration.

The hope expressed previously that, since it colors the urine, it might be used for studying the renal function seems not to be borne out by later work, for the reason that only about 3 per cent of the dye is excreted in the urine even with normal conditions.

The decided advantages possessed by phenoltetraiodophthalein over tetraiodophenolphthalein for purposes of cholecystography have caused us to substitute the former for the latter in routine use in the Barnes Hospital.

Since sending this manuscript to press we have found still another substance which gives excellent cholecystograms. This is the sodium salt of tetraiodoisophenolphthalein. Preliminary experiments indicate a marked absence of toxic effects, but we have not yet used it sufficiently to know whether it possesses any advantages over phenoltetraiodophthalein.

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* This work was aided by a grant from Edward Mallinckrodt, Jr.

* From the Department of Surgery, Washington University School of Medicine and Barnes Hospital.

[1] Graham, E. A.; Cole, W. H.; Moore, Sherwood; and Copher, G. H.: Cholecystography: Oral Administration of Sodium Tetraiodophenolphthalein, J. A. M. A. **85**: 953-955 (Sept. 26) 1925. Graham, E. A.; Cole, W. H.; Copher, G. H., and Moore, Sherwood: Simultaneous Cholecystography and Tests of Hepatic and Renal Functions, ibid. **86**: 467-468 (Feb. 13) 1926. Graham, E. A.: *Gallbladder Diagnosis from the Standpoint of the Surgeon,* Radiology **6**: 273-278 (April) 1926.

EXPERIENCE WITH CHOLECYSTOGRAPHY IN CASES COMING TO OPERATION *

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Since the introduction of cholecystography by Graham and Cole of St. Louis, numerous articles have appeared paying tribute to it as a measure of great value in the diagnosis of gallbladder disease. There have been, however, relatively few reports of series of consecutive cases coming to operation in which the cholecystographic diagnoses have been correlated with the findings at the operating table and in the pathologic laboratory. On this account, it has seemed to us that it might be of some value to present these correlations for our patients who have been operated on, and to tabulate, so far as it seems feasible, the similar reports found in the literature.

It is perhaps advisable to preface the presentation of our own cases by a brief summary of the technic and point of view in interpretation that we have followed, although these have been copied in all essential features from the work of others. Our joint experience with the test began about six months ago, when sodium tetra-iodophenolphthalein was coming into general use. This salt has been employed exclusively. The technic has varied somewhat, but the routine has been to give 3.5 Gm. of the salt between 8 and 9 o'clock in the evening, well after the usual evening meal, and to make the initial roentgenologic examination on the following morning, approximately twelve hours later. These hours of administration and examination were chosen because they fitted best with other hospital work. The intravenous route for administering the dye was generally used because it has seemed the most accurate, and we have not been impressed by there being any particular inconvenience or hazard in it. Some of the patients were allowed a small amount of food in the morning before appearing for the first roentgen-ray examination; this seemed to have no appreciable effect on the practical worth of the test, although it was undoubtedly an unwise digression from the generally accepted procedure.

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In viewing the roentgenograms, we have endeavored in each case to make one of three diagnoses; namely, cholelithiasis, a pathologic biliary tract, or a normal biliary tract. The chief criteria used to differentiate these have been: (1) the presence of shadows regarded as representing calculi, and (2) the degree of visualization of the gallbladder. A diagnosis of cholelithiasis has been made whenever the control films or the cholecystograms or both showed shadows of increased density that looked like calculi, and when in the cholecystograms a visualized gallbladder presented shadows of diminished density that had a similar resemblance. The fact that stones are frequently revealed in the latter fashion in gallbladders that seem otherwise to respond quite normally to the dye makes it unwarranted, in our opinion, to infer from this test alone that there is in such cases any other pathologic condition than the stones present; hence, the distinction has been made in the roentgenologic interpretation between cholelithiasis and a pathologic biliary tract. The diagnosis of pathologic biliary tract has been applied to those cases in which there was no visualization of the gallbladder and to those in which this visualization was indistinct; in several of these, calculi were found at operation, but neither the control roentgenograms nor the cholecystograms afforded any definite evidence of their existence. A clear cut visualization of the gallbladder by the dye has been regarded as implying a normal biliary tract. Since cholecystography should probably be considered as primarily a measure of gallbladder function, it is to be expected, as with any functional test, that there will be all degrees of response to it; and while such graduated variations undoubtedly occur, in our limited experience there have been practically no cases that seemed in the midzone between normal and pathologic so far as visualization was concerned; almost without exception, they have appeared definitely one or the other.

Table 1 shows the twenty-six cases that we have had in which the test was employed and operation performed; three cases in which oral administration alone was tried are not included, because faulty vehicles prevented the absorption of the dye, and therefore no diagnostic opinion could be expressed. The control films of the gallbladder region were taken ordinarily from twelve to thirty-six hours before the giving of the dye; a naught in this column signifies that nothing suggestive of stones or gallbladder was seen. Under cholecystograms, the demonstration of stones is indicated by a plus sign or number in the column headed stones. The findings on the films taken twelve hours after the administration of the dye are the only ones tabulated; in this column, a plus sign indicates good visualization of the gallbladder, and a naught indicates total lack of visualization; a faulty visualization is so stated. In listing the cholecystographic diagnoses, normal and pathologic are used instead of the expressions normal biliary tract and pathologic biliary tract. The surgical findings were taken from the operative notes, and the pathologic findings from the laboratory reports.

Table 1—*Data of Cholecystographies in Authors' Cases*

		Cholecystograms					
Case	Control Films	Stones*	12 Hours†	Later	Diagnosis from Cholecystograms	Diagnosis at Operation	Diagnosis from Pathologic Specimens
					Intravenous Administration		
1	Stones	+	+	....	Cholelithiasis	Gallstones	Stones; slight chronic cholecystitis
2	None	0	-	. .	Normal	Normal gallbladder	No specimen
3	0	0	0	. .	Pathologic	Carcinoma of ampulla of Vater; common duct obstructed	No specimen
4	0	0	Faint	+ at 24 hours	Normal		No specimen
5	0	0	+	.	Normal		No specimen
6	0	0	+	. .	Normal		No specimen
7	0	0	0	..	Pathologic		Stones; slight chronic cholecystitis
8	0	0	Faint	+ at 36 hours	Normal		No specimen
9	0	0	0	. ..	Pathologic		Stones; slight chronic cholecystitis
10	Gallbladder visualized?	0	As control	....	Pathologic		Mild chronic cholecystitis
11	0	+	+	. ..	Cholelithiasis		Stones; slight chronic cholecystitis
12	0	+	0	. .	Cholelithiasis		Stones; chronic cholecystitis
13	0	0	0	.	Pathologic		Chronic cholecystitis
14	0	0	+		Normal		No specimen
15	2 stones	4	+	.	Cholelithiasis	.	Four stones; chronic cholecystitis
16	0	0	0	.	Pathologic	Gallstones; chronic cholecystitis .	Stones; chronic cholecystitis
17	0	0	0	.	Pathologic	Gallstones; chronic cholecystitis..	Stones; chronic cholecystitis
18	0	0	0	Faint at 18 hours	Pathologic	Hepatitis; cholangeitis	Many bacteria in bile
19	0	0	+	. ....	Normal	Adhesions; chronic cholecystitis ..	Pericholecystitis; gallbladder normal
20	0	0	0	. ...	Pathologic	Gallstones . ..	No specimen
21	0	0	0	. ...	Pathologic	Gallstones; chronic cholecystitis..	Stones; marked chronic cholecystitis
22	0	0	0	..	Pathologic		Chronic cholecystitis
23	0	0	0	.	Pathologic		Chronic cholecystitis
24	0	0	+	.	Normal	.	No specimen
					Oral Administration in Cases with Intravenous Administration		
3	0	0	0	. .	Pathologic		
12	0	+	0	.. .	Cholelithiasis		
25	None	+	+	... .			No specimen
26	0	0	0	.. . . ..			Stones; chronic cholecystitis

* In this column, plus signifies stone shadows present; 0, no stone shadows

† In this column, plus signifies normal visualization of gallbladder, 0, no gallbladder shadow seen

In five of these twenty-six cases, a diagnosis of cholelithiasis was made by cholecystography, and stones were found in each at operation. Of thirteen cases diagnosed as pathologic biliary tract, eleven showed gross evidence of disease, eight patients having stones, two presenting definite pictures of chronic cholecystitis, and one having what was presumed to be a carcinoma of the ampulla of Vater that was obstructing the common bile duct. In one case in which a laparotomy had already revealed an acute hepatitis and cholangeitis with a bacteria-laden bile, the test was performed two weeks after the operation, and although the status of the biliary apparatus at the time the examination was made is not known, it seems to us reasonable to suppose that there was a pathologic condition then present sufficient to support the impression of disease given by the cholecystograms. In only one case in which the diagnosis of pathologic biliary tract was made did the operation fail to disclose gross evidence of disease, and in this case, although the surgeon considered the gallbladder normal, it was removed and from microscopic examination was adjudged by the pathologist to be the seat of a "mild chronic cholecystitis." In the eight cases interpreted as normal by cholecystography, seven were considered so at operation and the gallbladders were not removed. It is possible that a pathologic examination would have yielded evidence of disease in some of these. The eighth case showed adhesions about the gallbladder; the surgeon, thinking it diseased, removed it, but inspection of its interior and microscopic examination of its walls supplied no evidence of abnormality.

Table 2.—*Comparison of Findings at Cholecystography and Those at Operation*

		Cholecystogram Findings						Operative and Pathologic Findings				
			Visualization			Diagnosis			Pathologic Change			
Author	Cases	Stones	None	Faulty	Good	Diseased	Normal	Stones	Gross	Slight	Normal	Comment
					Intravenous Administration							
Sosman, Whitaker and Edson: Am. J. Roentgenol. **14**: 495 (Dec.) 1925	43	17	14	7	5	38	5	27	10	0	6	One reported normal and found diseased; two with faint shadows reported pathologic and found normal; slight and gross disease not distinguished
Carman: Lancet **2**: 67 (July 11) 1925	50	4	32	5	9	41	9	28	19	3	0	Nine with normal cholecystograms showed some pathologic changes, two containing stones
Cohen and Roberts: Brit. M. J. **2**: 54 (July 11) 1925	10	..	6	2	2	7	2	5	2	0	3	One diagnosed pathologic and found normal; one case regarded as doubtful showed a calculus
Winslow and Melgard: Northwest Med. **24**: 124 (March) 1925	7	2	3	1	1	6	1	4	2	0	1	
Nemours-Auguste: Bull. et mém. Soc. de radiol. méd. de Paris **119**: 123 (May 12) 1925	8	..	..	..	..	5	3	3	2	0	3	
Kaznelson and Reimann: Klin. Wchnschr. **4**: 1309 (July 16) 1925	4	..	2	1	1	..	..	2	0	1	1	
McCoy and Graham..............	24	4	12	0	8	16	8	11	4	1	8	*One case diagnosed pathologic* showed only minor microscopic changes
Moore: Am. J. Roentgenol. **13**: 515 (June) 1925	53	..	..	..	..	48	5	..	44	..	9	Four reported pathologic and found normal; technical faults suspected in two of these; Graham, Cole and Copher later reported 96.25 per cent diagnostic accuracy in 80 cases from this clinic
Einhorn, Stewart and Ryan: M. J. & Rec. **122**: 77 (July 15) 1925	13	..	..	..	..	..	..	..	..	..	..	Diagnosis not corroborated in one case; dye given intraduodenally in one case
					Oral Administration							
Carman: Lancet **209**: 67 (July 11) 1925	143	15	62	26	39	103	39	71	32	18	21	Ten with definite disease and eleven with slight pathologic change gave normal cholecystograms; five of former had stones. Three normals gave no shadow
Sosman, Whitaker and Edson: Am. J. Roentgenol. **14**: 495 (Dec.) 1925	21	..	..	..	..	..	..	..	..	..	..	*One case not confirmed at operation*
Oakman: Am. J. Roentgenol. **14**: 105 (Aug) 1925	7	..	..	..	..	..	..	..	..	..	..	One case not confirmed at operation
McCoy and Graham..............	2	1	1	0	0	2	0	2	..	..	0	
Graham, Cole and Copher: Am. J. Roentgenol. **14**: 487 (Dec.) 1925	?	..	..	..	..	..	..	..	..	..	..	Accuracy about 80 per cent

In a few cases we have endeavored to obtain gallbladder shadows following the oral administration of bromides, as suggested by Sabatini and Milani,[1] but without success; rather dense shadows of the urinary bladder were, however, secured.

Thus, of these twenty-six cases in which operation was performed, the cholecystographic diagnosis failed of confirmation in only one, and in it the findings were somewhat equivocal. This gives a diagnostic accuracy of 96 per cent for the method as evaluated by surgical and pathologic examination.

Table 2 is an attempt to assemble the cases recorded in the literature in which the findings by cholecystography have been compared with the findings at operation. In arranging these cases under the headings chosen, some liberty has been exercised on our part and some mistakes have probably been made in doing so. Of the 212 cases examined with intravenous administration of the dye, the diagnoses made from the cholecystograms were substantiated at operation in 91 per cent; in the cases with oral administration, the confirmation was somewhat lower but was nevertheless more than 80 per cent. In the number regarded as errors there have been included some which were doubtfully so, and probably a few of the early cases with later technic and interpretation would not have been thus classed. Variations in different clinics have depended presumably in large measure on the differences in types of patients submitted to examination, and on difference in points of view of surgeons, roentgenologists and pathologists; thus, the results are scarcely comparable except in indicating a general agreement on the high diagnostic value of the method.

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[1] Sabatini, G., and Milani, E.: Visibilite radiologique de la vesicule biliare apres administration "per os" de bromures alcalins, Presse méd. **33**: 1160 (Aug. 29) 1925.

SUMMARY

1. In twenty-six consecutive cases in which operation was done in this clinic, the cholecystographic diagnoses were confirmed at operation in 96 per cent.

2. In 212 cases collected from the literature, with intravenous administration of the dye, the cholecystographic diagnoses were confirmed in 91 per cent. In cases with oral administration of the dye, the confirmation was more than 80 per cent.

3. The accuracy of cholecystography in predicting gallbladder disease merits its wide use as a procedure in diagnosis.

THE PRECLINICAL STAGE OF HEART DISEASE *

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On first thought it may seem that an attempt to establish a preclinical stage of heart disease is a refinement in diagnosis attainable only by a select few. Such is not the case. Sufficient evidence has accumulated since the days when hearts were, for the most part, studied at the bedside to show that organic heart defect is usually the result of several successive phases of development, quite comparable to the germinating grain of corn that evolves the blade, the stalk and eventually the ripened ear. Chronic myocarditis—for which a more appropriate name would often be progressive heart muscle inefficiency—is generally the ultimate end-result of accumulated heart protests which, at their inception, we once were wont to wave aside with a gesture of inconsequence.

EARLY SYMPTOMS MORE CONSTANT THAN EARLY SIGNS

Heart protests, in the beginning, are nearly always subjective symptoms alone, and the symptoms need not at all be confined to the left chest. Physical findings at this stage may be expected to be absent. The heart is found either normal or else not sufficiently disturbed in function as yet to yield the familiar group of signs on which a diagnosis of heart disease can be classically constructed. When heart defects attain the coarse proportions of persistent and transmitted murmurs, profound heart enlargement, grossly irregular pulse, congestions, edema, anasarca and physical prostration—except in those comparatively rare cases in which an acute illness acutely involves the heart—there is little that can then be done for either heart or patient. Such signs as these announce the approaching end of life.

The aim in this age of conservation, the fundamental purpose of periodic health examinations, is to anticipate and, by the correction of underlying faults and defects, to avoid such cardiocirculatory catastrophes as "typical heart disease." This can be accomplished by the early recognition of early heart protests.

PRECLINICAL SYMPTOMS OF HEART AFFECTIONS

The preclinical stage of heart embarrassment can be reduced to five symptoms, of any one or more of which the patient will complain. These five symptoms include shortness of breath, heart hurry, chest oppression, chest pain and physical fatigue, all attendant on moderate or accustomed effort. The presenting of such symptoms warrants the most assiduous search, both of the heart and elsewhere throughout the body, for the cause of these early heart protests.

THE "ACUTE INDIGESTION" FALLACY

Patients frequently assert that the foregoing symptoms are relieved by belching, and that therefore the heart protests are due to "gas pressing on the heart." "Acute indigestion" is a favorite newspaper headline elaboration of the same idea, grasped to explain the sudden cardiac deaths of prominent men. "Indigestion" is the black beast of the cardiologist, and the most difficult of all obsessions of which to rid the patient, once he has evolved this satisfying concept. As medical men we know how unconsciously and with what ease one can eructate. The upper end of the stomach is not an air-tight structure to imprison gases that later by their accumulation forcibly explode. And even if the opening to the stomach by neuroses might contract, it would seem that distention of the gastric walls by gas would mechanically draw the distention apart.

So why permit this "gas pressure" delusion longer to encumber a patient's thoughts and lull him into a false sense of security? Surely it is more logical to assume that decomposition of food occurs because the heart is incapable of supplying the stomach with blood sufficient to elaborate digestive juices or motivate the stomach; or one might adopt the hypothesis that the heart is embarrassed reflexly by way of the pneumogastric nerve which supplies both stomach and heart. Whatever the underlying cause in a given case might be, it is a clinical fact that when a heart can be embarrassed by "gas pressure" there is usually something wrong with that heart.

PHYSICAL SIGNS OF THE PRECLINICAL HEART

There are physical signs that the physician may find within the heart itself, and others that are to be sought for elsewhere in the body, which may indicate a beginning heart affection. Among those to be found in the heart may first be mentioned the "extra beat" or intermittent pulse which, however long established in the apparently healthy, is always abnormal and always a sign of heart protest. Second in importance is some degree of heart enlargement in the transverse heart diameters, detected by percussion and determined by the roentgen ray. The sounds in such a heart may be sharp and clear before the exercise test, but muffled and indefinite following effort; or the reverse of this situation may prevail, especially in patients who at some time have been engaged in strenuous competitive athletics. The rate response of the heart to exercise, which usually in the normal returns within two minutes to the preexercise rate when sitting, may continue for a longer time to remain elevated from twenty to forty beats; or an affected heart may actually slow down in rate under an exercise test and not attain the previous rate until several minutes have elapsed.

Any one of these early heart signs—intermittent pulse, heart enlargement, auscultatory phenomena, rate response—is of sufficient importance to warrant some degree of heart care and intensive heart study.

EARLY PHYSICAL FINDINGS OUTSIDE THE HEART

First among the physical findings that may be encountered outside the heart is the occurrence of râles at the base of the left lung posteriorly, often an early and always a valuable sign of heart impairment unless otherwise explained. Anemia, thyroid enlargement, vasomotor disturbances, dizziness on sudden change of posture, all call for heart suspicion. Either overweight or malnutrition may tax the heart. Emotional upsets in the temperamentally placid or continued high tension in persons of neurotic tendencies may eventually establish

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* Prepared for the Committee on Periodic Health Examinations.

heart imbalance with resultant circulatory inefficiency. The "toxins of fatigue," from too intensive physical application or mental concentration, can certainly harass the heart.

APPLYING THE REMEDIES

When a physician conducting a periodic health examination has found symptoms or signs indicative of early heart involvement, he naturally next addresses his attention to the correction or removal of underlying causes. The search for such factors begins with evaluating the patient's previous history. It may be that a heart has been affected earlier in life by one of those diseases which is known to throw a heavy load on it, and that heart is no longer sufficient to support the circulation in the patient's present occupation, circumstances or at his present age. Habits may be faulty and need correction. The patient may require guidance in personal hygiene—in matters of diet, weight, exercise, rest or diversion. Some hidden constitutional disease may need to be sought and corrected to relieve the heart embarrassment.

In any and every instance of heart protest, regardless of other likely causative factors, the tonsils should be required to establish their right of occupancy in the throat, and this applies regardless of the age of the potential heart patient. Each tooth should prove its innocence by roentgen-ray study and by the clinical examination of a not too conservative dentist who is familiar with the relation existing between dental defects and organic involvement elsewhere in the body. Drugs that act directly on the heart are rarely if ever required in the preclinical stages of heart affections.

Through such inspections, considerations and methods as those here outlined, a physician may logically expect to appraise the preclinical stage of heart disease.

323 South Eighteenth Street.

DIABETIC COMA AND INSULIN

LEWIS FOX FRISSELL, M.D.
AND
JOSEPH HAJEK, M.D.
NEW YORK

Before Banting's discovery of insulin, diabetic coma was a serious condition to treat, both in the wards of the hospital and in private practice. Since the advent of insulin, the mortality has diminished to such an extent and with such rapidity that death caused by diabetic coma now appears as unnecessary.

In this article, an attempt is being made to show the difference in mortality before the discovery of insulin and since that time, with especial reference to diabetic coma. For this purpose, all diabetic patients admitted to the wards of St. Luke's Hospital during a period of four years are made subjects of study; they are divided into two groups, group 1 covering the preinsulin and group 2 the postinsulin years.

It will be noted that the first, or preinsulin, group covers the two years just prior to the discovery of insulin, and the second group covers the first two years after its discovery, beginning, however, with 1923; 1922 is intentionally omitted as a year in which the use of insulin was restricted by the supply.

GROUP 1

During the period 1920-1921, 113 patients with diabetes were admitted to St. Luke's Hospital—fifty males and sixty-three females. The medical division cared for 101 patients, and the surgical division treated twelve.

The medical service recorded eighteen deaths among the 101 patients treated, or a total mortality of 18 per cent. Diabetic coma was responsible for twelve of the eighteen deaths. In the remaining six cases, the immediate cause of death was due to other diseases than diabetes, leaving a mortality of 12 per cent due directly to diabetic coma.

Of the twelve patients treated in the surgical division, four died, a 33 per cent mortality, though none died in diabetic coma. Table 1 shows the mortality and the causes of death.

TABLE 1.—*Mortality in One Hundred and Thirteen Cases (Group 1, Fifty Males, Sixty-Three Females) of Diabetes in St. Luke's Hospital in 1920-1921*

Cases	Deaths	Mortality, per Cent	Cause of Death
Medical Service			
101	18	18	Diabetic coma, 12; lobar pneumonia, 1; cardiac failure, 2; renal disease with hypertension and cerebral hemorrhage, 2; cardiorenal disease, 1
Mortality due to diabetic coma, 12 per cent			
Surgical Service			
12	4	33	Gangrene of right foot, pneumonia and acidosis, 1; otitis media, sinus thrombosis and acidosis, 1; gangrene of the leg and septicemia, 1; multiple abscesses with septicemia, 1

GROUP 2

During 1923-1924, 163 patients with diabetes were treated at the hospital; seventy-eight of them were males and eighty-five females. In the medical service, of the 134 treated, thirteen died, giving a total mortality of 9.7 per cent. Only one among these died in coma, a mortality from coma of 0.7 per cent.

The surgical service cared for twenty-nine cases, resulting in seven deaths, none being due to coma. In table 2, the causes of the thirteen deaths are given.

TABLE 2.—*Mortality in One Hundred and Sixty-Three Cases (Group 2, Seventy-Eight Males, Eighty-Five Females) Treated During 1923-1924*

Cases	Deaths	Mortality, per Cent	Cause of Death
Medical Service			
134	13	9.7	Diabetic coma, 1; pneumonia, 3; empyema, 1; cardiorenal disease, 2; carcinoma of the colon, 1; leukemia, 1; chronic endocarditis, 1; acute mastoiditis, 1; gangrene of foot with gas bacillus infection, 1; carbuncle with septicemia, 1
Mortality due to diabetic coma, 0.7 per cent			
Surgical Service			
29	7	24.4	Carcinoma of the sigmoid, 1; acute appendicitis with abscess, 1; cardiorenal disease, 1; uremia with gangrene of foot, 1; gangrene of foot and septicemia, 1; carbuncle with septicemia, 1; cellulitis with septicemia, 1

SUMMARY

In comparing the mortality of the two groups, the preinsulin period with the postinsulin, we find that:

1. The mortality due to diabetic coma dropped from 12 per cent to 0.7 per cent.
2. The general mortality diminished about 9 per cent.
3. Infection is the most frequent cause of death in patients suffering from diabetes, and as ordinary infections are not influenced by the use of insulin, which must often be used in much larger doses, emphasis is to be put on the prevention of infection rather than its cure.

791 Park Avenue—260 West Seventy-Second Street.

INTRAGASTRIC RADIUM TREATMENT OF CARCINOMA OF THE STOMACH *

THOMAS O. MENEES, M.D.
GRAND RAPIDS, MICH.

The frequency and low operability of cancer of the stomach make improved methods of irradiation desirable. The application of radium immediately to the growth has definite advantages over external roentgen-ray therapy alone.

Pinch[1] has applied radium to the interior of the carcinomatous stomach by having the patient swallow a radium tube on a string. The position is observed by the roentgenoscope, and the radium may be moved by pulling on the string. From this, he has obtained definite palliative results, in slowing the rate of growth, checking hemorrhage, and relieving pain.

With radium applied in this way, the surface of the tumor bears the brunt of the exposure. Adjacent sensitive organs are protected by the rapid decrease in the intensity of irradiation, with distance. This permits heavy caustic irradiation, sufficient to influence highly resistant scirrhous carcinomas and adenocarcinomas. Roentgen-ray treatment could not be carried to this intensity because of the injury to other viscera in close relation to the stomach.

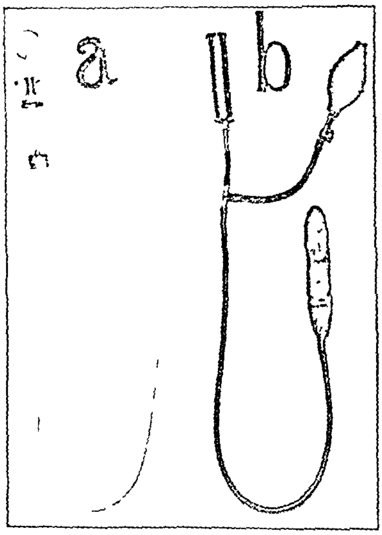

Fig. 1.—Intragastric radium applicator. In use, *a* is inserted in *b*; this permits movement of the radium in the distended stomach, without loss of the air, necessary to visualize tube and neoplasm, under the roentgenoscope.

By this method, the exact relation of the radium to the stomach wall is not determined, and uninvolved mucosa may receive excessive exposure. Also, there is little control over the position of the radium. Without accurate localization and control, a thorough irradiation of the surface of the tumor cannot be carried out.

For accurate placing of the radium, both tube and tumor must be visualized. A radium tube in the stomach is readily visible under the roentgenoscope, but the tumor is invisible without a contrast medium. With the usual contrast medium, barium sulphate, the tube is lost in the barium shadow. This leads to the use of air, as it will contrast both. The air must be confined to keep it under control and prevent it from rising to the highest point of the stomach.

To meet these requirements, a rubber balloon was cemented to a small rubber tube.[2] The radium on a flexible spirally wound wire was placed inside this. The bulb of a sphygmomanometer was attached to the other end of the tube.

This applicator, when passed into the stomach and distended, gave a clear outline of the radium tube and the carcinomatous filling defect. It was unsatisfactory, because the radium could not be moved without loss of the air in the bag. To overcome this difficulty, the spiral wire carrying the radium is attached to the piston of a syringe (fig. 1). The free end of the rubber tube is drawn over the tip of the syringe to form an air-tight seal. The bulb is attached by a T-connection. Any movement of the piston of the syringe is transmitted to the radium through the spiral wire, and it can be pushed ahead or pulled back without loss of air.

The applicator is passed as a stomach tube into the portion of the stomach involved. It is distended to outline any irregularities of the tumor, and the radium is adjusted to the level of the growth by movement with the syringe (fig. 2). Gravity is of help in bringing the radium in closer contact with growths involving only one curvature, and the patient's position is changed to obtain this. An arrangement should be made by which the patient can be roentgenoscoped at right angles without change of position, as it is frequently important to determine the position of the radium in three dimensions, without moving the patient and displacing the radium.

The radium is used lightly filtered (0.5 mm. of silver) to obtain the greatest surface effect with the least general irradiation, and to minimize the time of application. The treatment is divided into short sessions of from one to three hours daily and continued until [illegible] the accessible surface of the tumor has been [illegible]. Usually 50 mg. is used. More would shorten [illegible] time of treatment but would stiffen the end of the applicator and make it difficult to pass into narrow or [illegible] lumina. In some cases a moderate amount of high voltage roentgen-ray therapy has been given also. This must necessarily be limited, because of the frequent roentgenoscopic examinations. The tube is small, and after passing, gives the patient little discomfort. A reasonable distention of the bag gives no sensation.

The radium cannot be satisfactorily placed in all cases by this method. Where the lumen is much narrowed or tortuous, it may be impossible. In growths limited to one curvature, occasionally the outline of the growth is difficult to obtain, and accurate placing impossible. Then, only small dosage would be permissible. In small tumors limited to the pylorus, it is difficult to place the radium accurately.

The microscopic structure of tumors has been sufficiently correlated with their response to irradiation to enable us to predict the effect on a given tumor, and the quantity necessary to affect it.[3] Adenocarcinomas and scirrhous growths, which constitute the majority of gastric cancers, demand heavy caustic irradiation to influence them. In these, the danger of perforation would not permit heavy dosage sufficient to destroy the full thickness of the tumor. So palliation is all that can be hoped for, with some surface destruction and possible fibrosis of the deeper portions. The more cellular tumors, as medullary and diffuse carcinoma, are quite sensitive to irradiation. One case probably belonging to this class has undergone a complete clinical retrogression, with disappearance of the filling defect (fig. 3). There has been no recurrence of symptoms in the two years since last intragastric treatment. Parham[4] considers colloid carcinoma as rather sensitive to irradiation, but none has been treated by this method. Naturally, metastases would not be influenced by this method.

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* From the Blodgett Memorial Hospital.

[1] Pinch, A. E. H.: A Report of the Work Carried Out at the Radium Institute, London, from Jan. 1, 1922, to Dec. 31, 1922, Radium **2**: 56-58 (April) 1923.

[2] Menees, T. O.: Intragastric Radium Application, Am. J. Roentgenol. **11**: 561-562 (June) 1924.

[3] Ewing, J.: Radium Report of the Memorial Hospital (Second Series), New York, Paul B. Hoeber, Inc., 1924, p. 247.

As the majority of gastric cancers are relatively insensitive to irradiation, this method is practically only palliative. It is of value in slowing the rate of growth and relieving pain and hemorrhage. Probably, the greatest value is in opening up the narrow portions of the stomach by destruction of the surface of the tumor, and preventing an obstruction with its violent train of symptoms. There is also an increased fibrosis of the deeper portions of the tumor with restraint of growth and obliteration of blood vessels. Along these lines, much can be done to prolong and make more comfortable the life of the patient and allow death to occur from other complications, rather than as a result of hemorrhage or starvation from a complete obstruction.

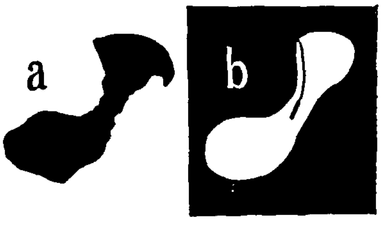

Fig. 2.—*a*, tracing of roentgenogram of barium-filled stomach, showing an extensive annular carcinoma of pars media; *b*, tracing of same stomach as *a*, with the carcinomatous filling defect outlined by the air-inflated bag of the applicator. The smaller irregularities of the tumor surface are lost, but the general contour of the involved portion of the stomach is clearly defined. The radium tube, which would be lost in barium, is sharply contrasted by air.

As it is practically palliative, the method is no competitor of surgery, but rather a complement. The pyloric growths accessible to surgery are the most difficult to apply radium to accurately. With the less accessible cardiac growths, it is much easier to place radium.

The dangers are probably small if proper care and gentleness are used in placing the radium. Perforation and hemorrhage would be the most serious complications. Perforation can be guarded against by not allowing the radium to come in contact with uninvolved portions of the stomach wall. Where involved, the stomach is thickened, and by using lightly filtered radium, the destructive effect is confined to the superficial portions of the tumor, and the possibility of perforation negligible. Hemorrhage from introduction of the radium is likely only in highly cellular growths with many poorly developed blood vessels. This hazard must be taken as these tumors are frequently highly sensitive to irradiation, and the tendency to hemorrhage is decreased by the obliterating endarteritis of the radium reaction.

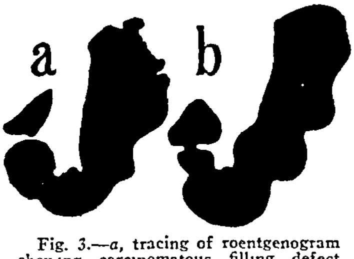

Fig. 3.—*a*, tracing of roentgenogram showing carcinomatous filling defect in fundus; *b*, tracing of same stomach as *a*, showing disappearance of the filling defect following intragastric radium treatment.

SUMMARY

1. By the method of intragastric application of radium described, a greater dosage can be applied to the surface of a gastric carcinoma with less general irradiation of the upper abdomen. This can be pushed to a caustic effect with superficial necrosis.
2. From this increased irradiation greater palliative effects can be obtained in slowing the rate of growth, checking hemorrhage, relieving pain, and preventing obstruction by destroying the surface of the tumor in narrow portions of the stomach.
3. The method is practically only palliative, and complete retrogression is only to be expected in highly cellular anaplastic growths which are not too extensive.
4. There is little danger in the method.

Clinical Notes, Suggestions, and New Instruments

CONGENITAL VARICOSITY OF THE ANGULAR VEIN

Ellis M Schwartz, M.D, New York
Associate Attending Physician, Ear, Nose and Throat Department, Peoples Hospital; Assistant, Ear, Nose and Throat Department, University and Bellevue Medical College Clinic

J. G., a boy, aged 20, came to me complaining of a small mass over the left nasal bone, which had been present for the last thirteen years. For the last two years it had been getting larger, until at the time I saw him, it was the size of a hazelnut. He came for medical help because of cosmetic reasons. The patient did not remember the mass appearing after a blow, but stated that it may have been there from childhood, and remembered seeing it first about thirteen years previously. On careful questioning, he said that when the mass first appeared, as far as he could remember, a doctor told him that by lancing the mass it would disappear and the trouble would clear up. It was probably then mistaken for a cyst. Fortunately resort to this treatment was not made. Six years previously, a simple mastoidectomy had been performed on the same side, but this was done years after the mass was noticed and had no bearing on the case at all.

The slightly bluish mass was situated over the left nasal bone, inside the inner canthus of the left eye, and was the size of a hazelnut. It was soft, and could be made to disappear on pressure. The nasal bone seemed to be eroded by the pressure of the mass. Believing it to be of venous character, I did the various tests, according to the anatomy of the venous system of the face, so as to show whether interference with the return flow of venous blood would have any effect on its size.

It is proper at this moment to review the anatomy of the facial vein.[1]

The frontal vein descends over the forehead on the side of the median line, lying beneath the skin, and terminates at the inner angle of the orbit by uniting with the supra-orbital vein to form the angular.

The supra-orbital is a relatively large trunk which runs transversely above the superior margin of the orbit. It arises at the external angle of the orbit, passes inward beneath the *orbicularis palpebrarum*, pierces the muscle at the inner angle of the orbit, and unites with the frontal vein to form the angular.

The facial vein is formed by the frontal and supra-orbital veins at the inner extremity of the eyebrow. It passes around the inner border of the orbit, then obliquely downward and backward across the face, over the ramus of the mandible in front of the angle, thence across the submaxillary and superior carotid triangles, to open into the internal jugular at the level of the hyoid bone. The portion of the vein from its formation to the lower border of the orbit is the angular vein, and branches arise from this which pass into the orbit to communicate with the ophthalmic vein Below the ramus of the jaw, it receives a large communicating branch from the external jugular, and the portion between this communication and the internal jugular is the common facial vein.

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[4] Parham, D.: Colloid Carcinoma, Am. Surg. 77: 103-104 (Jan.) 1923.

[1] Piersol: Human Anatomy.

The facial and angular veins are destitute of valves, or have valves insufficient to prevent the flow of blood in an inverse direction—from the facial and angular veins into the ophthalmic. The two most important communications with the cavernous sinus are through the ophthalmic vein Much of the superficial blood of the face passes inward to the brain case and the interior of the facial region while the remaining blood flows downward to join the jugular veins.

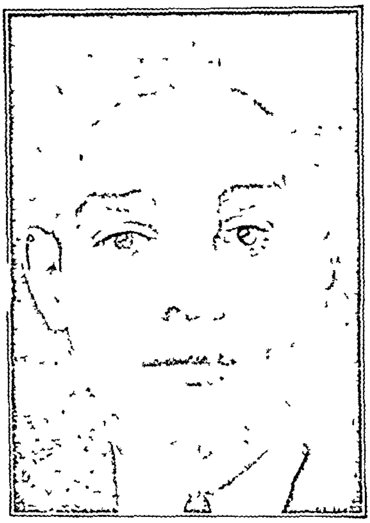


Fig 1—Effect on the size of the mass by the wearing of a very tight collar which demonstrates the interference with the return flow of venous blood by the collar and therefore the enlargement of the varicosity

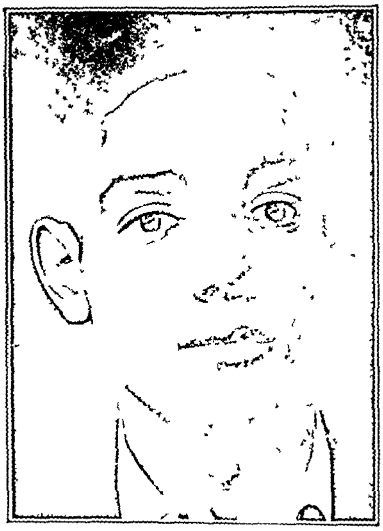


Fig 2—With the collar removed, the mass has entirely disappeared or is very slightly perceptible

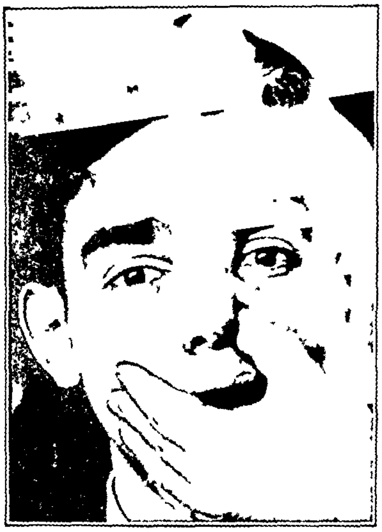


Fig 3—With the collar removed, pressure on the angular vein causes the reappearance of the mass.

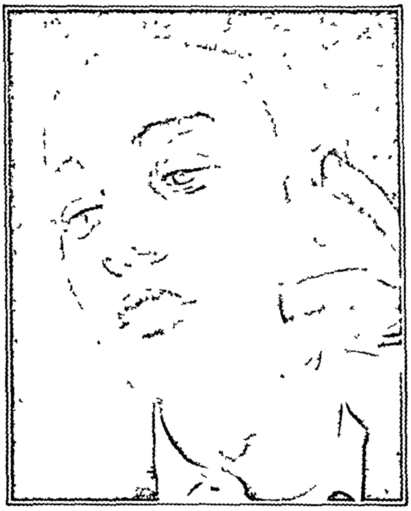


Fig 4—With the collar removed, pressure on the facial vein causes the reappearance of the mass

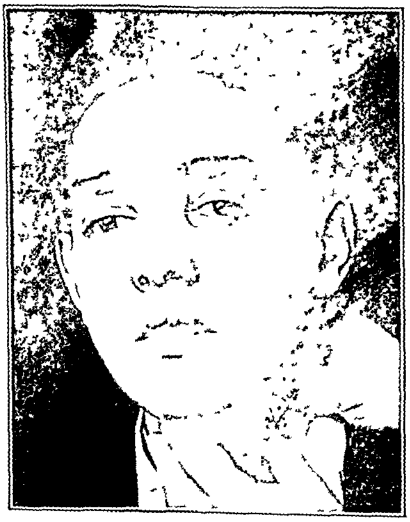


Fig 5—With the collar removed, pressure on the deep facial vein and the internal jugular vein causes the reappearance of the mass

The facial vein is less flaccid than most superficial veins. Because of these facts, I would emphasize the point which, although it has no direct bearing on this case, cannot be overlooked in the discussion of these anatomic relations, and that is, the ease with which septic infections of the face or forehead may spread by way of the ophthalmic vein or pterygoid plexus to the cavernous sinus, resulting in thrombosis or meningitis.

The superior ophthalmic vein will have a bearing on the eye findings in this case. It is sufficient to mention its tributaries, which are the anterior and posterior ethmoidal veins, the lacrimal vein, the muscular veins, the two superior venae vorticosae, the anterior and posterior ciliary venae and the venae centralis retinae.

When the patient's collar was tightened, the mass became larger, removal of the collar caused the mass to become smaller and barely noticeable. In order to show the effect of pressure on the veins by means of the finger, I had the patient remove the collar Then I compressed the veins at various points at which the return flow was interfered with. Pressure on the angular, facial, common facial and internal jugular veins increased the size of the mass. Removal of the pressure, thus removing the obstruction to the return flow, each time made the mass disappear.

Examination of the eyes showed corresponding changes in the veins of the eye on the side similar to that of the mass. The eyes were examined by Dr Martin Cohen, to whom I referred the patient with the belief that an interesting condition might be discovered, because of the anatomic communication between the angular and the ophthalmic veins.

With the patient's collar off, examination of the left eye showed the disk of normal appearance. The veins and arteries were normal. There were expansile pulsations on the physiologic cup. The right eye was normal.

With the collar tightened, examination of the left eye showed the conjunctival veins at the outer quadrant more injected than in the right eye After three minutes, the vein over the physiologic cup was getting larger than in the remaining portion of the retina, the pulsations were more evident. The superior and inferior retina veins were more engorged. There was no change in the course of the vessels and in the arteries. The cornea of the same eye, examined by the slit lamp, showed pulsations of the eyeball. In the right eye vascularization was normal. By the slit lamp method, the oscillatory movement was normal, and there were no pulsations visible. Physical examination by the internist revealed nothing of unusual interest, excepting a slight pulsation of the subclavian arteries. The systolic blood pressure was 136; diastolic, 86. Clinical examination of the blood revealed: nonprotein nitrogenous constituents, in milligrams per hundred cubic centimeters: uric acid 4.5; urea nitrogen, 12; miscellaneous constituents: sugar 0.097; chlorides, as sodium chloride, 0.492. To rule out congenital cardiac and vascular anomalies, the roentgen ray was employed, which showed the heart proportionately small and inclined to the dropped type, which, however, was more or less suited to the stature of the patient. There was no gross abnormality in the proportional dimensions or contour, excepting moderate hilum thickening. There was no evidence of gross pathologic change in either pulmonic field, excepting perhaps a hypervascularization a shade more noticeable in the upper lobes.

The Wassermann reaction was negative.

THE PURPOSES OF PRESENTING THE CASE

1. Since the history dates back thirteen years, I believe the condition may be regarded as congenital, as before that time it may have been so small as to attract no attention.
2. *The case presents an unusual location for varicosities.*
3. This type of mass should be differentiated from a cyst in that area or from a tear sac involvement. The consistency of the mass and its disappearance on pressure ruled out a cyst. There being no history of tearing of the eye and the mass being too high up ruled out dacryocystitis.
4. It is also important to differentiate this mass from a meningocele, because of the same location.

TREATMENT

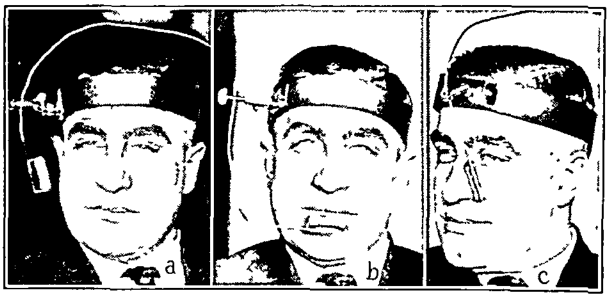
It is very essential for the patient to wear a loose collar, so as to remove any impediment to the return flow.

Until this day the patient has refused operation, but when he submits to the operation it will be necessary to ligate the supra-orbital and the frontal veins above the mass and the angular vein below the mass; the results should be good because of the sufficient collateral circulation in this area.

RADIUM APPLICATOR FOR TREATMENT OF LESIONS ABOUT THE HEAD, FACE AND NECK

William H. Kennedy, M.D., Indianapolis

Great difficulty has been experienced with methods of applying radium to the face, head and neck. This applicator, while very simple in construction, is adjustable to any angle by bending the copper wire, and when once adjusted remains in perfect contact with the lesion, allowing the patient to move his head in any direction.



Applicator in position (*a*) at distance; (*b*) for treating lip; (*c*) for treating nose

Another important consideration is distance without the use of blocks or gauze. This method eliminates the handling of radium, as it can be placed in the rubber tube with forceps and removed in the same manner.

It consists of a leather head-band, copper wire and universal ball joint made to be used with one-fourth inch rubber tubing, in which the radium is placed.

The applicator is manufactured by the Akron Surgical Instrument Company, Indianapolis.

A NEW URETERAL STONE EXTRACTOR AND DILATOR

Wilford A. Councill, M.D., Baltimore

In an effort to overcome the uncertainties of our present methods of treatment for ureteral calculi—waiting for the stone to pass spontaneously, ureteral dilatations and injections of oil, with the ever present possibility of permanent injury to the kidney, and perhaps final surgical intervention—I have devised an instrument which has been used successfully in a number of cases. This instrument gradually dilates and protects the ureteral wall while the stone is being extracted, thus minimizing trauma and reaction.

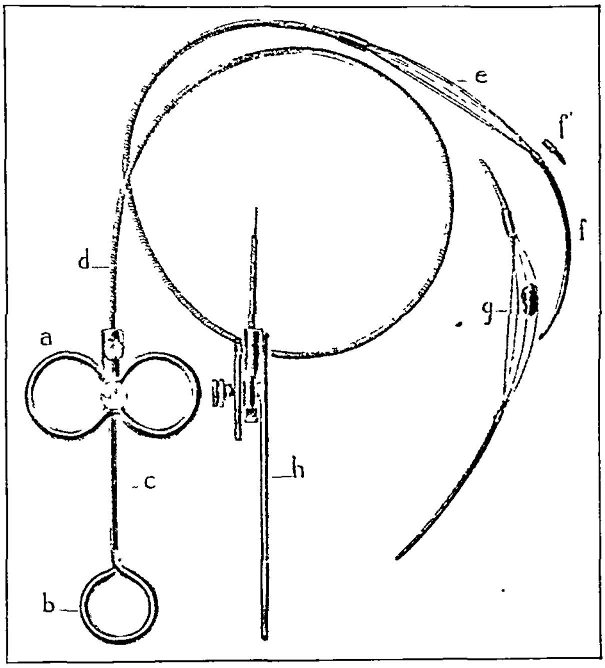


Fig. 1.—*a*, movable handle; *b*, ring for thumb; *c*, groove in shaft for the movement of *a*, *d*, spiral sheath; *e*, wires closed; *f*, filiform tip; f^1, metallic tip

Figure 1 shows a flexible instrument consisting of five principal parts: a movable handle, *a*, connected to an inner or central wire, *g*, and with thumb in *b*, slides in a groove, *c*, opening the mesh of wires for reception of the stone; *d* is a spiral sheath through which the central or control wire connects with the filiform tip, *f;* tension made on *a* causes the mesh, *c*, to open; the central wire, *g*, becoming an external wire, serves to hold the stone in place when tension is removed from *a*.

Preliminary to the extraction, a roentgenogram is taken to show the position and size of the stone, and a pyelogram is made to determine the size and condition of the ureteral tract. If strictures are encountered, they must be dilated before one proceeds further. When the ureteral tract has been dilated sufficiently, as confirmed by a second pyelogram, the extraction of the stone by the instrument may follow.

The patient is given morphine, ¼ grain (16 mg.), and scopolamine, 1/100 grain (0.6 mg.). An operating cystoscope is passed and the ureter in question catheterized. Procaine, 4 per cent, is injected into the ureter and allowed to remain for ten minutes. With the catheter still in place, olive oil is injected *until there is a fulness felt in the kidney region.* The catheter is withdrawn and the extractor passed up to the desired point (Fig. 2 *a*). A second roentgenogram is taken to show the relation of the extractor to the stone. When this is correct the mesh is opened (Fig. 2 *b*) thereby forcing the stone into the wires (Fig. 2 *c*). When the stone is brought down to the bladder, the handles of the instrument are removed and the cystoscope is withdrawn. The extractor is taken out through the urethra with the stone intact.

When the stone can be seen the fluoroscope is ideal, as each step can be followed from the introduction of the instrument to the extraction of the stone.

REPORT OF CASES

Eighteen stones have been removed from different locations in the ureteral tract, varying in size from a grain of wheat to that of a bean. Following are brief descriptions of three cases in the series:

Case 1.—J. K., tailor, aged 43, whose general condition was good, had been troubled with ureteral calculi for six months. He complained of a dull aching pain in the right kidney region associated with a slight frequency and some hematuria. A roentgenogram revealed a shadow about 4 cm. from the ureteral orifice A pyelogram showed a dilatation above the stone but no abnormalities below. Both ureters were catheterized and kidney function tests were made. Urine obtained from the left side was normal and the output of phenolsulphonphthalein, 30 per cent. The urine from the right side was cloudy and contained many pus and red blood cells, the phenolsulphonphthalein output being 10 per cent. An extractor was passed and a stone about the size of a pea was removed. Beyond a slight discomfort at the time of extraction, the patient had no ill effects and went to work the next day.

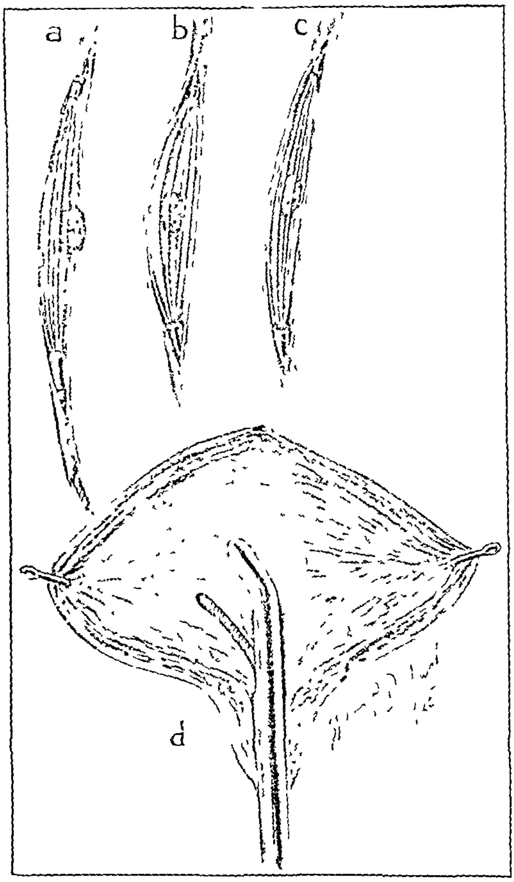


Fig. 2.—*d*, interior of bladder; cystoscope and stone extractor in ureter; *a*, wires at correct position; *b*, wires opened with stone enmeshed; *c*, stone extractor with stone enmeshed about to be withdrawn, showing how wires protect the lumen of the ureter.

Case 2.—H. M., a farmer, aged 47, whose general condition was good, had had intermittent attacks of renal colic for two years. He complained of pain in the left lumbar region associated with some frequency of urination and a marked hematuria. A roentgenogram revealed a shadow 2 inches (5 cm.) above the pelvic brim. The ureters were catheterized and specimens collected. The urine from the left side was cloudy and contained much pus; that from the right side was normal. Functional tests of phenolsulphonphthalein given intravenously showed: on the right side, appearance time three minutes; output, 30 per cent in half an hour; on the left side, appearance time, five minutes; output, 15 per cent. A pyelogram showed a dilated ureter and kidney pelvis above the stone; below, the ureter was small and constricted. After several ureteral dilations, the extractor was passed and a stone the size of a bean was removed. The patient returned in one week for further treatment. All symptoms cleared up. In this case an operation in all probability would have been necessary.

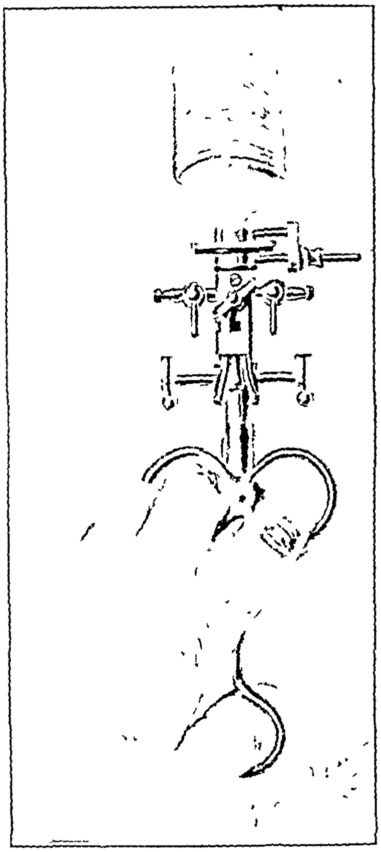


Fig 3.—Instrument introduced through cystoscope; method of opening wires either to dilate the ureter or use as a stone extractor.

Case 3.—H. T., an engineer, aged 30, whose general condition was good, entered the hospital complaining of pain in the left side associated with frequency of urination, urgency and hematuria. A roentgenogram showed a shadow about the size of a bean just below the pelvic brim. The cystoscopic examination was negative except for blood coming from the left ureter, which in turn was catheterized. As the catheter was passed, obstruction was met at the shadow, as shown in a roentgenogram and confirmed by a pyelogram. The patient left the hospital and later come to the office for treatment In a week's time a second roentgenogram was taken and showed the stone at the same position. After the ureter had been dilated sufficiently, a rough triangular stone was removed. Following the extraction, the patient complained of a slight discomfort for several days.

In another case the instrument served as a dilator and allowed the stone to pass of its own accord: A. M., a clerk, aged 50, primarily complained of pain in the back; he had had intermittent pain in the right loin associated with a slight hematuria for three months. A roentgenogram revealed a shadow just below the kidney pelvis, which was confirmed by a pyelogram. The usual routine cystoscopic technic followed and the extractor was passed. There was some difficulty in passing the instrument beside the stone, and instead of extracting the stone, it was pushed up into the kidney pelvis. The ureter was dilated and the patient told to return in two days for further treatment, but instead of returning at the time requested, he came in the next day, having passed the stone that night. This demonstrates that while there was a failure on extraction, the ureter was sufficiently dilated with the instrument to allow the passage of the stone.

SUMMARY

By this procedure, duration of pain, chance of injury to the kidney and possible surgical intervention are minimized, and even though the instrument was originally designed as a stone extractor, it has been used effectively as a dilator.

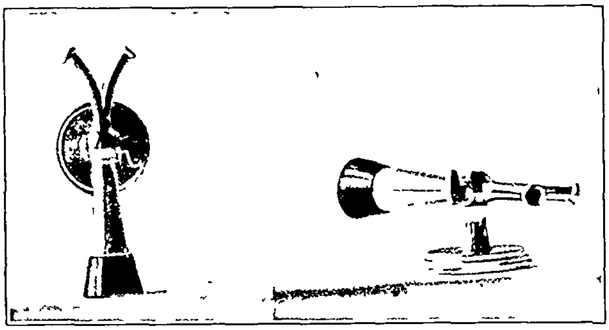
A NEW COMBINED STETHOSCOPE CHEST PIECE *

Howard B. Sprague, M.D., Boston

Because of the variable qualities of different cardiac murmurs, it has been evident for a considerable time that no single stethoscope chest piece is satisfactory in transmitting all the sounds produced in the heart. Ideally, a stethoscope that could be made to vary its optimal resonating qualities between wide limits in order to respond correctly to both high and low pitched sounds would be the most sensitive instrument to use. Practically, such instruments are cumbersome and complicated.

For clinical uses two forms of stethoscope chest piece have been found adequate in transmitting heart sounds and murmurs, except in the rare instances in which the naked ear is more satisfactory in responding to high pitched, blowing murmurs, such as those of aortic regurgitation. These two chest pieces are the bell type, which is most useful for low pitched murmurs, and the Bowles type, which registers high pitched murmurs more accurately.

The use of these two forms of stethoscope has been a routine procedure in the Cardiac Clinic of the Massachusetts General Hospital, and it is felt that no cardiac examination is complete unless advantage has been taken of the particular qualities of each chest piece. The bell stethoscope is capable of demonstrating rumbling diastolic murmurs of mitral stenosis which are inaudible with the Bowles type, and, conversely, the latter records the hissing or blowing murmurs of aortic regurgitation which cannot be heard with the bell.



Combined chest piece, showing position at left when bell is in use (front view) and position at right when Bowles section is in use.

The frequent changing from one chest piece to the other, often several times during the examination of a single patient in various positions, necessitated removing the aurals from the ears in order to avoid unpleasant noises, especially from striking the diaphragm of the Bowles. It also was inconvenient from the wearing out of the rubber tubes and the need for disposing of one chest piece when using the other.

The only alternative lay in the use of the Bloomfield or similar detachable connection. This we have found to be unsatisfactory for the reason that the connection tends to become loose, allowing the Bowles section to drop out or causing extraneous noises, and the combination does not do away with the necessity of disposing of the lower section while using the upper. I designed the instrument here described to remedy these difficulties. It is a combination of the Bowles and bell chest pieces in which each is in its customary position when in use. The illustration shows the mechanism, which consists merely in the connection of the receivers by a three-way valve. By simply turning this valve, one or the other chest piece is connected to the binaurals and the other is shut off. This precludes any loss of sound through the other chest piece and also prevents disturbance by extraneous noise.

Trial of this combination chest piece by Dr. Paul D. White and myself at the clinic has shown that its use makes the examination of cardiac patients much easier and more rapid.

The George P. Pilling & Son Company of Philadelphia have cooperated in designing the instrument.

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* From the Cardiac Clinic of the Massachusetts General Hospital.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS *

BERNARD FANTUS, M.D.
Associate Clinical Professor of Medicine, Rush Medical College
CHICAGO

(Continued from page 1837)

Medicated Enemas.—Medicated enemas for diacolonic action should, as previously stated, be given in the smallest bulk possible provided irritation is minimized by sufficient dilution. Starch water, being more efficient in lessening irritation, should be regularly employed as a diluent whenever such is required. Infusion of digitalis may be administered by rectum in tablespoonful doses, and even be made to carry a moderate dose of potassium acetate if desired. The following medicaments are generally well retained when given in the form of micro-enemas (30 cc.): tincture of opium, 1 cc.; chloral hydrate, from 1 to 2 Gm.; sodium salicylate, 2 Gm.; caffeine sodiobenzoate, 0.2 Gm. In prescribing enemas, the medicating ingredients are ordered from the apothecaries in pure form or in solution, which is then diluted, if necessary, with water, salt solution, or best starch water just before administration. Thus, in the treatment of infantile convulsions, we might prescribe chloral hydrate, 0.3 Gm. and sodium bromide, 0.6 Gm., in a teaspoonful of water, the dose to be diluted with 2 tablespoonfuls of starch water, and given by slow rectal injection.

Oil may be used as a vehicle for the diacolonic administration of oil-soluble volatile bodies. Thus, for colonic anesthesia, ether is employed in quantities of from 120 to 180 cc. with half the amount of olive oil, and the addition usually of 7.5 cc. of paraldehyde. The details of administration of these are given by Meyer and Robbins.[63] The interesting suggestion has been advanced by Goldbloom [64] to introduce, in the treatment of whooping cough, rectally 2 cc. of ether dissolved in 15 cc. of olive oil twice daily. He reports marked symptomatic improvement in a majority of cases in which he used it, especially in those cases that had well advanced into the paroxysmal stage.

For endocolonic action, in the treatment of catarrhal and ulcerative conditions of the large intestine, astringent enemas are of value. First among these deserves perhaps to be mentioned Cantani's tannic acid enteroclysis, which he used with success, especially in the premonitory stage of cholera, but which may also be employed in other inflammatory conditions of the colon. He injected slowly several times daily 2,000 cc. of 0.5 per cent tannic acid solution at about 104 F. The quantity of tannic acid may be varied from 0.25 to 1 per cent, and it may be most conveniently prescribed for the patient in form of the official glycerite of tannic acid (20 per cent), 25 cc. of which added to 1 liter of water yields a 0.5 per cent solution. The addition of acacia (5 per cent) or the use of starch water to lessen by colloidal demulcent action the irritation of the astringent is advisable. In chronic colitis with colonic tenderness and diarrhea, good results are obtained from enemas of silver nitrate, in 1:10,000 solution, gradually increased in strength from day to day to the point of tolerance (burning pain), which is usually reached with solutions of 1:1,000 or 1:2,000 strength. These astringent enemas are intended to be retained as long as possible.

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* This is the twenty-fifth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

[63] Meyer, H. W., and Robbins, B. F.: Colonic Anesthesia, J. A. M. A. **83**: 1581 (Nov. 15) 1924.

[64] Goldbloom, Alton: The Use of Ether in Pertussis by Intramuscular and Rectal Injection, J. A. M. A. **85**: 1791 (Dec. 5) 1925.

Antiparasitic Enemas.—Quinine is quite unsuitable for absorption through the colon (diacolonic action), as has been shown by William Fletcher.[65] Weak solutions are too bulky to be retained, and the quinine is not absorbed sufficiently from them to enable one to rely on its action. Strong solutions, from 0.5 to 1 per cent, are so irritating that they are not, as a rule, retained longer than twenty minutes. The pain and tenesmus that follow the injection of strong solutions and the discharge of mucus and shreds of membrane, even after the use of weak solutions, are evidence of the poisonous action of quinine on the colonic mucosa. The absorption from 4 Gm. given by the rectal route was inferior to that from 0.15 Gm. given by mouth. For endocolonic action, on the other hand, quinine is useful. Thus, for the treatment of intestinal amebiasis, quinine sulphate or hydrochloride solution, from 1:2 000 to 1:1,000, in quantities of from 1 to 2 liters, is particularly recommended. The solution should enter slowly by gravity, through a long rectal tube passed as high as possible and should be retained as long as possible.

In cases in which such quinine treatment causes too much irritation, what might be called endocolonic osmotherapy, as suggested by Van der Togt,[66] might be resorted to. In experiments on means of destroying amebas by high osmotic tension in the bowel, he found sodium chloride and carbonate too irritating in the high concentrations required for this purpose. However, sucrose enemas, from 20 to 40 per cent, given twice daily for eight consecutive days, cured a large proportion of cases. Soap solution (1 per cent), it is asserted, kills the pregnant females of *Oxyuris*. Vinegar (from 30 to 100 per thousand) enemas are also recommended in oxyuriasis.

Simple Oil Enemas.—These are essentially evacuant enemas; but, as they are to be retained for many hours, usually over night, they are given with the technic of the retention enema. The indications for simple oil enemas are: 1. To soften feces, in constipation characterized by the formation of hard scybala and in that due to partial obstruction of the colon. 2. For evacuant action, in so-called spastic constipation, in pelvirectal constipation, and in any other form of constipation in which oral administration of cathartics is contraindicated by gastric disturbance. 3. For soothing action, in excessive colonic and rectal irritability, in colitis, and in proctitis. 4. It has been suggested that oil enemas might inhibit absorption of toxic products. That the oil has the power of removing substances soluble in it is shown by the fact that it is passed dark yellow or olive green and of offensive odor. We have no definite knowledge, however, of the degree to which this property might be of clinical value.

The chief contraindication to oil enemas is diarrhea, and mainly because, in this condition, the oil would not be retained for a sufficient length of time to be of use; although another objection against the introduction of saponifiable oils would be the fact that excessive peristalsis may carry intestinal juices far down the colon, and the results of the oil digestion might still further increase the irritation.

To be well borne, the oil must be pure and free from rancidity, of an acidity not exceeding from 40 to 55 (Fleiner). This is more important than that it come from a certain source. Thus, poppy seed oil, oil of sesame, or cottonseed oil, when pure, are just as good for this purpose as olive oil. It would seem that petrolatum would be preferable to all of these, as it can never become irritant.

The following technic is recommended: For self administration of the oil, the patient should have everything prepared before going to bed, so that he does not have to get up after having taken the injection. The bottle of oil is placed in a basin of hot water until it has acquired blood heat (100 F.). An ordinary fountain syringe might be used, provided the nozzle has a sufficiently large bore to permit the oil to pass. Though it is intended that the oil be introduced slowly, the bag usually has to be hung 2 or 3 feet high, owing to the viscosity of the oil, which makes it run rather slowly. The clip should be placed within easy reach of the patient. Having poured the oil into the bag, the patient lies on the left side with a folded towel underneath the buttocks. The nozzle is inserted into the anus, and the oil permitted to flow. Should the patient experience distress or desire to move the bowel, the flow of the oil is checked and the patient remains quiet until the desire has passed away. It might then be possible to introduce an additional quantity of oil. It is usually best, however, to be satisfied with the introduction of an amount that can easily be retained. A piece of absorbent cotton or a woman's sanitary towel or both may be applied to prevent accidental soiling of the bed, for the passage of flatus may be accompanied by a spurt of oil. If the injection produces discomfort and interferes with sleep, it may be taken early in the morning, and the patient may lie in bed for three or four hours afterward. The patient should understand that, unless the oil remains in the intestine for several hours at least, satisfactory results cannot be expected. The total quantity to be injected depends, therefore, on the patient's ability to retain it. This is so variable that no definite quantity can be stated. The principle to be followed is to have the patient gradually increase the amount injected on successive nights, until a satisfactory amount can be introduced and retained. The patient may not be able to retain more than 70 cc. at first, but is likely to retain in course of time as much as 250 and even 500 cc. For children, from 50 to 150 cc.; for infants, 15 cc. suffice. When scybala disappear, and soft mushy stools are passed, the quantity introduced as well as the frequency of injections is gradually diminished. Just as soon as satisfactory daily evacuations have been secured and the patient's distress has been relieved, the injections may be given on alternate nights, unless resumption of daily injections is necessitated by the patient's condition. Later on the injections are given every third night and finally only on the evening of the day on which the bowels were not opened. A single injection may cause daily evacuation for several successive days.

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[65] Fletcher, William: Bull. Inst. M. Research, Federated Malay States, 1924.

[66] Van der Togt: Geneesk. Tijdschr. v. Nederl.-Indie **61**: 395, 1921.

When the injection acts well, it will be followed by a very soft bowel movement in the morning. If the morning evacuation is not obtained, an enema of physiologic sodium chloride solution should be taken in the morning after breakfast.

Evacuant Enemas.—Whenever an abnormal accumulation of feces occurs in the descending or pelvic colon or in the rectum, the bowel should be thoroughly washed out before other treatment is instituted. It is really not rational to upset motor and secretory functions all the way down the bowel by giving a physic in order to clear out the lower end of the tube when this can be done so much more directly by washing out from below. Preeminently is the enema the only evacuant to be considered when intestinal obstruction is present or suspected, in which cathartics merely stimulate the already overstimulated bowel above the site of the obstruction, increasing pain and vomiting and aggravating shock and the injury existing at the point of obstruction. Hence the patient's chances for recovery decrease as the use of cathartics is pushed. Here all efforts to make the bowel move should be from below; and evacuant enemas, in increasing order of potency, should be repeated every three or four hours, care being taken not to overdistend the colon, until success is secured or the uselessness of the procedure becomes evident, when operation should be instituted without delay, within twelve hours, if possible.

Whether high or low, large or small, hot or cold, simple or medicated, enemas should be employed to secure evacuation in any one case depends on the conditions present. If the rectum merely is to be emptied of feces, 0.5 liter injected rapidly with the patient in the sitting posture suffices. If the most thorough possible cleansing of the bowel is aimed at (colonic flushing), the largest possible quantity of warm water—from 1 to 2 liters—is slowly introduced with the patient recumbent or, better still, in the knee-chest position. In either case, soap (about 1 to 2 per cent) is the most generally useful addition. Large colonic flushings, however, must not be employed for many weeks in succession, as they are liable to increase the atony of the bowel and of the abdominal musculature. On the other hand, a small (0.25 liter), cool enema rather quickly injected into the bowel, to stimulate it to evacuation, may be considered one of the least objectionable procedures, even when employed quite habitually. In such cases, a progressive lowering of quantity and of temperature should be aimed at, the patient always first attempting to have a bowel movement without its aid.

When the soapsuds enemas fail to secure the desired results, a purgative enema may be resorted to. A small evacuant enema of magnesium sulphate, 60 Gm.; glycerin, 30 cc., and water, 120 cc., is popular in some hospitals. A larger purgative enema is composed of hot soapsuds, 0.5 liter, with magnesium sulphate, 60 Gm.; glycerin, 60 cc., and oil of turpentine, 15 cc., emulsified by yolk of egg. Another useful combination is 0.5 liter each of milk and molasses (or honey). One or the other of these rarely fails to secure the evacuation, if it is physically possible.

In the treatment of tympanites, volatile irritants seem more efficient than the nonvolatile cathartics: evidently the former appeal more especially to the gas-evacuating mechanism than the latter. Volatile agents, such as asafetida or oil of turpentine, are best administered in the form of an emulsion, and it is under this heading that their prescribing has been discussed.

Colonic Irrigation.—Permitting fluid to run into and out of the bowel by means of a two way irrigator, until the washings return clean, secures the most thorough possible cleansing and medication of the colon. Thus, in colitis, especially the ulcerative form, irrigating the colon with huge quantities (from 16 to 20 liters) of water as hot as can be borne (120 F.), preferably with the patient in the knee-chest posture, gives good results. Such irrigations—the so-called return flow enema—are also frequently the sovereign remedy against postoperative gas pains. Hot colonic irrigation is of value to raise low body temperature in collapse. More questionable is the use of cool irrigation as an antipyretic measure. Hot and cold colonic irrigations are also employed to induce vascular and possibly other changes in adjoining organs, such as the prostate or the internal generative organs of the female.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

DIGITALIS DISPERT.—An extract of digitalis, obtained by extraction of digitalis leaves with cold water and evaporation of the extraction by a special process. It is standardized by the minimum lethal dose frog method of Straub (*Arch f. exper. Path u Pharmakol.* 80:52, 1916-1917) so that 1 Gm. represents 1,900 lethal frog doses.

Actions and Uses—Those of digitalis. It is the aim of the manufacturer to offer in digitalis dispert the entire water soluble activity of digitalis glucosides closely resembling their state and proportion in the leaf.

Dosage.—0.08 Gm. (1⅕ grains) from three to six times daily. Digitalis dispert is supplied in the form of tablets only.

Manufactured by Krause Medico Gesellschaft m b H, Munich, Germany (Schering & Glatz, Inc, New York, distributor) No U. S. patent. U S trademark 194,834

Digitalis Dispert Tablets 0.08 Gm.: Each tablet represents 150 lethal frog doses

Digitalis dispert is prepared by extracting specially harvested, air-dried, digitalis leaves with cold water by a special maceration process The solution thus obtained is brought to dryness by a special spray process of evaporation

Digitalis dispert is a light brown powder of somewhat aromatic odor and bitter taste

PERTUSSIS BACILLUS VACCINE (See New and Nonofficial Remedies, 1925, p. 354).

Parke, Davis & Company, Detroit.

Pertussis Immunogen—A bacterial antigen (ectoantigen) obtained by agitating live pertussis bacilli with physiological solution of sodium chloride and separating the liquid from the organisms; the extract is free or nearly free from bacterial cells and toxin and is preserved with phenol There is some evidence that this material will yield approximately the same results as the ordinary pertussis bacillus vaccine Pertussis immunogen is marketed in packages of one 10 cc. vial *(Bio 315)*, each cubic centimeter containing the antigens from 2,000 million of bacteria.

PNEUMOCOCCUS VACCINE (See New and Nonofficial Remedies, 1925, p. 355).

Parke, Davis & Company, Detroit.

Pneumococcus Immunogen—A bacterial antigen (ectoantigen) obtained by agitating live pneumococci Types I, II and III with physiological solution of sodium chloride and separating the liquid from the organisms; the extract is free or nearly free from bacterial cells and toxin and is preserved with phenol. There is some evidence that this material will yield approximately the same results as the ordinary pneumococcus vaccine. Pneumococcus immunogen is marketed in packages of one 10 cc. vial (*Bio 305*), each cubic centimeter containing the antigens from 2,000 million of bacteria.

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SATURDAY, JUNE 19, 1926

WATER: ENOUGH, MORE, OR LESS

Three fourths of the protoplasm of the body cells consists of water; the body fluids and secretions are even richer in this substance. After a little consideration, every one appreciates that water plays an important part as a "universal solvent"; at any rate, substances dissolved in it seem to react with greater ease and speed than when dissolved in other mediums. Consequently the physiology and biochemistry of living organisms include prominently the rôle of water. They deal not only with ingested water but also with that formed through the oxidative processes of the body. Thus, there are endogenous as well as exogenous sources of water. Its functions are not merely to act as a medium in which the chemical changes of metabolism occur; water also assists in the removal of waste products and the dissipation of heat. Rowntree[1] has remarked that, in relation to the duration of life, water occupies a position intermediate between food and oxygen; it is more vital than the former, and less vital than the latter.

Medicine is not unfamiliar with the circumstance that some substances which in certain quantities or concentrations may represent a blessing to the body are also liable to produce detriment when they are used in undue abundance. Hydrochloric acid shows its physiologic uses in the gastric functions; but even moderately larger concentrations act as irritants with marked severity. Some of the familiar poisons become wholesome drugs when their intake is reduced to a sufficiently low level.

Even water has its "pathology." Rowntree has described phenomena of what he terms "water intoxication" following introduction of very large amounts of the fluid under certain experimental conditions. In diabetes insipidus, the water balance is set at a level higher than normal. The level can be lowered immediately by the subcutaneous administration of the extract of the posterior lobe of the hypophysis. Subsequent to the use of the extract, the ingestion of water in the large amounts to which the patient has become accustomed results in marked toxicity. Larson, Weir and Rowntree observed patients who developed headaches, nausea, asthenia, incoordination, marked sweating and, in one instance, mild subcutaneous edema under these conditions. These findings are in accord with those of Miller and Williams. Patients with chronic nephritis and hypertension who took water in quantities up to 10 liters a day developed headache, dizziness, restlessness, chills, fulness of the abdomen, vomiting, dyspnea and cramps in the legs, marked increase in weight, and increase in blood pressure. Edema and the collections of fluid in undue quantities in some of the body cavities and tissue spaces represent better known instances of water out of place. Treatment of such conditions, often of a distressing nature, calls for the mobilization and transport of water. Nearly a quarter of a century ago, Widal[2] indicated the importance of a diet low in chlorides for certain cases of nephritic edema. Such a regimen may be followed by diuresis and reduction of the edema. Sometimes more than this is necessary to effect a relief. At the Mayo Clinic, Keith, Smith and Whelan[3] have secured beneficial results in selected patients with edema and ascites by carefully controlled diets low in water content. Many of the common foods of superior nutritive advantage contain considerable water. Deprivation of water in the intake thus may call for skill in dietary selection, particularly when the allowance is to be reduced to a total of 1,500 cc. daily. The possibilities of low fluid diets are likely to receive further detailed consideration in the near future.

LIMITATIONS OF COD LIVER OIL IN RICKETS

The discovery that nutritional disorder is the etiologic feature in the development of rickets, and the demonstration of some of the dietary and environmental factors, in contrast to endogenous agencies, concerned in the genesis of rachitic conditions are among the most notable contributions of recent experimental medicine. First of all, the diagnosis of the disorder at all stages has been made more precise through the aid that the newer knowledge of blood chemistry and roentgenologic technic of examination have contributed to the more familiar routine of clinical observation. Secondly, the contributory etiologic rôle of inappropriate or inadequate mineral nutrients in the diet, the effects of deficiencies of vitamin D—the specific antirachitic food essential—and the need of sunlight with its potent radiations in the ultraviolet region of the spectrum have become recognized. Furthermore, animal experimentation has been successfully called on to contribute to the elucidation of all aspects of the rickets problem.

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[1] Rowntree, L. G. The Water Balance of the Body, Physiol. Rev. **2**: 116 (Jan.) 1922.

[2] Widal, Fernand; and Javal, Adolphe: La cure de déchlorination; son action sur l'oedeme, sur l'hydratation et sur l'albuminurie a certaines periodes de la nephrite epithèliale, Bull. et mém. Soc. méd. d. hôp. de Paris **20**: 733, 1903.

[3] Keith, N. M.; Smith, Florence H., and Whelan, Mary: The Therapeutic Use of Diets Low in Water and in Mineral Content, Arch. Int. Med **37**: 550 (April) 1926.

Incident to this study it has happened that cod liver oil, long recognized as having antirachitic potencies, has been heralded as a veritable specific alike for the prevention and the cure of rickets. The widespread prevalence of this disease and the extremely untoward consequences of its unchecked progress for the person involved have served to give unusual prominence to rickets in the mind of the layman as well as of the physician. Under the unfeigned encouragement of the medical profession, child welfare agencies everywhere have preached the doctrine of the liberal administration of cod liver oil in infancy. The undoubted success in the large reduction of infantile scurvy as the result of educational propaganda has served to spur on the efforts of the promoters of public health. The public has been informed through numerous channels, including even the legitimate lay advertising in the sales promotion of manufacturers. The antirachitic cod liver oil has taken its place with orange juice and other antiscorbutics among the desiderata of children's dietaries.

Of this there can be little criticism. The time has arrived to take account of the hygienic accomplishments of the new procedures in the light of their claims. The importance of such control investigation of newly inaugurated health habits is well illustrated in connection with the efforts at goiter prophylaxis. The relation of the malady to a deficiency of iodine has been clearly established. The preventive and curative effects of small doses have likewise been demonstrated beyond question. But the consequences of undue enthusiasms created by such knowledge and expressed in the universalization of administration of iodine by mass methods are beginning to raise protests on many sides.[1] Hence it may be asked to what extent the promotion of the use of cod liver oil in infancy is on a basis that is defensible from every standpoint. Is it effective? Does it involve possibilities of unsuspected harm? Is it worth while? Should it be modified in any way?

Evidence is already available to suggest that the highest expectations are not consistently realized. The commonest reaction to such reports is to question the dosage or potency of the cod liver oil given. Since it has become possible to standardize the product through laboratory tests, there is less excuse for centering all criticism on the quality of the therapeutic agent employed. Thus, Wilson's[2] study of New York infants, aged from 1 to 3 months, born in the spring and summer of 1924, receiving graduated doses of from one-half to 1½ teaspoonfuls of a biologically tested cod liver oil, revealed the development of clinical rickets in 91 per cent of the subjects. A more intensive study of forty-seven infants, aged from 2 weeks, born in the winter of 1925, receiving daily doses of 1, 2 and 3 teaspoonfuls of biologically tested cod liver oil, showed the development of clinical rickets in 68 per cent of the cases, as compared with 76 per cent of the control series of thirty cases. Ninety-seven per cent of infants born in the summer, and 91 per cent of infants born in the winter who received cod liver oil showed roentgenographic evidence of rickets, as did 97 per cent of the infants born in the summer, and 98 per cent of infants born in the winter who did not receive cod liver oil. There did not seem to be any relation between the degree of rickets observed and the amount of cod liver oil received. Furthermore, a comparison of the degree and incidence of rickets observed in infants receiving and not receiving cod liver oil did not reveal any striking difference. Another significant feature of these New York patients is that the concentration of calcium and inorganic phosphorus in the serum of infants under 5 months of age with early clinical and roentgenographic evidence of rickets was within the normal range. This suggests that perhaps the rickets must be marked and of some duration to show regularly a reduction of the inorganic phosphorus in the serum.

This report, by no means isolated in its findings, must not be received in gloom or allowed to spread discouragement. It was true, even in the New York infants, that those receiving cod liver oil showed rickets that healed earlier than that of the control series. Wilson asserts that the development of rickets in the babies born in winter, in whom preventive cod liver oil therapy was instituted in the first month of life under special supervision, is not easily explained, particularly in comparing the findings with those in the control group. A consideration of the age period when the greatest incidence of rickets was observed, namely, in the fourth and fifth months, suggests that the findings described may be related to the rate of growth, since the rate of growth at this age period is the most rapid in infancy. The rapid growth of the majority of the infants and their general excellent condition may therefore bear some relation to the findings here observed. If the disease described is rickets, Wilson adds, it would seem to be universal in young infants. Her observations were conducted under the limitations imposed by an outpatient clinic; however, one can scarcely expect that this should not be representative of average home conditions among the less well-to-do. It behooves us to consider more seriously than is currently being done whether the inorganic or other food factors aside from vitamin D are not also involved in the rachitic tendencies so widely observed. In the animal laboratory, an adequate intake of well selected mineral nutrients is a potent help in averting rickets. More attention must perhaps be paid not only to dosage but also to the assimilation of cod liver oil. Bloch of Copenhagen has already sounded a warning in this respect. The lesson of recurrent rickets recently taught by Hess[3] indicates the need of unremitting vigilance and persistence in treatment. The unqualified success attained with cod liver oil under carefully controlled conditions of many clinicians should give assurance of the wisdom of its inclusion in prophylaxis. What is needed above all at present, however, is a better understanding of how rickets may be averted in the home as well as in the well ordered clinic.

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[1] Jackson, A. S.: Iodine Hyperthyroidism, Am. J. M. Sc. **170:** 271 (Aug.) 1925. Kimball, O. P.: Induced Hyperthyroidism, J. A. M. A. **85:** 1709 (Nov. 28) 1925. Goiter Prophylaxis, editorial, ibid. **85:** 1971 (Dec. 19) 1925. Hartsock, C. L.: Iodized Salt in the Prevention of Goiter, ibid. **86:** 1334 (May 1) 1926.

[2] Wilson, May G.: The Prevention of Rickets, Am. J. Dis. Child. **31:** 603 (May) 1926.

HUMAN CARRIERS OF TETANUS SPORES

The incidence of tetanus has always been greater in times of war than at other periods.[4] This menace was well realized during the World War, so that prophylactic measures against the disease were widely used. How successful they were is indicated by the statement, for example, that there were 1,450 cases of tetanus among the wounded sent to England during the war, and but for the use of antitetanic serum there would presumably have been 14,000 cases. Practically all mammals are susceptible to tetanus. The etiologic agent, the tetanus bacillus, is found quite frequently in the intestinal contents of herbivorous animals, notably the horse. These animals become responsible for the distribution of the micro-organism through their excreta. Highly manured areas are particularly liable to promote the occurrence of tetanus in soil-contaminated injuries such as war wounds usually represent. The disease may also be transmitted to new-born infants in places where the custom of dressing the severed umbilical cord with earth is followed, or where the dressings that are applied may be contaminated by soil. Tetanus neonatorum remains more common than might be supposed; according to Vaughan there are ten, possibly a hundred, deaths from it for every death from tetanus in soldiers.

The records of a single large state for a period of the last four years show 245 cases of tetanus with a mortality of 67 per cent. The histories in many instances suggest that the infection may have been of fecal origin. The fact that man can act like animals as a carrier of tetanus has long been known. The extent of this possibility has not been fully realized, the general opinion being that only those persons who are in intimate contact with horses are likely to be human carriers of the bacillus. Yet there are records published from many countries, including England and Germany as well as China, that attest the presence of the spore-bearing anaerobe, the tetanus bacillus, in the feces of persons. Thus, in China the surveys by Ten Broeck and Bauer showed that from one fourth to one third of the human fecal specimens examined harbored the micro-organisms.

The first definite results available from larger numbers of persons in the United States have just been recorded by Bauer and Meyer.[5] Out of nearly five hundred specimens from California, one fourth were found positive for tetanus spores. Confirmatory evidences have been secured from various states in sufficient numbers to indicate that other parts of the country are not devoid of human carriers of tetanus. Sex, age and occupation apparently do not play a part in their distribution, nor have atoxic strains of the bacilli been found. The extension of these studies is eminently to be desired; for the evidence that approximately 1 Gm., or 15 grains, of feces from every fourth person in the single state studied contains tetanus spores leads to the conclusion, as Bauer and Meyer believe, that an enormous amount of infectious material capable of producing fatal disease under favorable circumstances is being discharged daily by tetanus carriers. One cannot avoid the suspicion that the human carrier is more or less immune to the type of bacilli that he carries; he is, nevertheless, dangerous to those who are not carriers or who carry other types. Fortunately, the improved methods of sewage disposal tend to remove human dejecta from the possibility of contact with man and from the domain of soil contamination. The ubiquity of fecal bacteria compels us, however, to keep constantly in mind any possibilities of even indirect menace that they may represent—particularly when the Fourth of July threatens.

Current Comment

REVOCATION OF MEDICAL LICENSES ON TESTIMONY BY DEPOSITION

An obstacle in the way of proceedings to revoke licenses to practice medicine is sometimes the inaccessibility of essential witnesses. Missouri undertook to overcome this obstacle by authorizing the taking of testimony by deposition in the same manner and under the same rules and practice as govern the taking of depositions in civil cases. Such depositions are taken by duly authorized officers, empowered to compel witnesses to appear and testify. The State Board of Health, the licensing body in Missouri, is itself without power to compel the attendance of witnesses and the production of papers by subpena in any case. The constitutionality of such procedure was attacked on the ground that it denies the person whose license is at stake the "due process of law" to which he is entitled under the federal constitution. In a recent case,[6] however, the United States Supreme Court sustained the Missouri statute. The license of the plaintiff in error, Leon Hurwitz, was revoked by the state board of health because he had unlawfully produced an abortion. The proceedings were reviewed by the state circuit court and the supreme court of Missouri,[7] but both courts sustained the action of the board. Hurwitz thereupon carried the case to the United States Supreme Court. In affirming the decisions of the courts below and denying Hurwitz the relief he sought, the supreme court pointed out that the accused is afforded due process of law if he is given reasonable notice and reasonable opportunity to be heard, due regard being had to the nature of the proceedings and the character of the rights affected by it. These requirements, said the court, are satisfied by the procedure authorized by the Missouri medical practice act, as that procedure was applied by the state board of health, since—

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[3] Hess, A. F.: Recurrent Rickets, Am. J. Dis. Child. **31**: 380 (March) 1926.

[4] Fitzgerald: Tetanus, in Nelson's Loose-Leaf Living Medicine **2**: 131, 1920.

[5] Bauer, J. H., and Meyer, K. F.: Human Intestinal Carriers of Tetanus Spores in California, J. Infect. Dis. **38**: 295 (April) 1926.

[6] State of Missouri ex rel. Hurwitz v. North, — U. S. —; 46 S. Ct. 384; 70 L. ed. 406, decided April 12, 1926.

> The notice prescribed was reasonable. The testimony of all witnesses who appeared before the board was taken and recorded, including that of the plaintiff in error. Although the statute did not authorize the board to issue subpenas, the plaintiff in error was authorized, as the state court held, to take the depositions of witnesses who did not voluntarily appear. Officers who take depositions are authorized to compel witnesses to attend and give testimony. The depositions, when taken, may be read at the hearing before the board. The procedure prescribed and followed here gave ample opportunity to plaintiff to make a defense to the charges preferred and there was no denial of due process.

The decision is important in that it points a way to simplify proceedings looking toward the revocation of licenses. If the law of a state already authorizes the taking of testimony by depositions, the licensing board can now proceed more confidently than before. If, however, the state law does not authorize the taking of testimony in this way, it may well be amended to accomplish that end. Otherwise, the difficulty and expense of procuring the attendance of witnesses will continue, as at present, a serious obstacle to the revocation of licenses that ought to be revoked.

THE HEALTH NEEDS OF NEW YORK

New York is one of the greatest municipalities in the world. It is significant, therefore, to learn how a committee of physicians, giving special study to its conditions, visualizes the health problems of such a community. The Public Health Committee of the New York Academy of Medicine has recently summarized the problems facing the city with regard to its health needs as follows: decentralization of population and better housing conditions; strengthening of the sanitary safeguards in food and milk production and distribution; adequate sewage and garbage disposal; systematic development of health education based on sound principles; supervision and control of occupational hazards; extension of outdoor recreational facilities, and suppression of obnoxious and deleterious odors, dust and the smoke nuisance.[8] The absence of direct reference to active disease, epidemics and other bacterial menaces should not be interpreted as indifference to such factors. Disease control is a well recognized aspect of public health control. Indeed, the New York committee has given prominence to the baffling nature of some of the communicable diseases of the central nervous system and has suggested the organization of a commission for the study of the etiology, pathology and epidemiology of these. It has also called attention specifically to the inadequate control of whooping cough, which stands as the third highest cause of death among the acute infectious diseases. But the attempted education of a municipality to make budgetary appropriations in the direction of personal prophylaxis and preventive hygiene shows how far the medical profession has traveled toward disease prevention. In many respects the physician is necessarily an individualist. Stryker[9] has insisted that no friend of the medical profession could bemoan this or wish to change it. And yet, he adds, there are times when the individual physician, oppressed by the manifold duties and responsibilities which flow from the high calling which he follows, is prone to forget that the attainment of the great ends to which he has dedicated his life—the safeguarding and protection of the public health—can best be served by combined action rather than by working alone. The altruistic efforts of the Public Health Committee of the New York Academy of Medicine indicate how well our profession can serve in this respect.

PROTECTING THE PUBLIC IN MISSOURI

Apparently, the public and the medical profession of Missouri are finding the cleaning of their Augean stables of medical licensure a difficult task. The situation reveals again the unholiness of any alliance between public health and politics, and even more, the difficulty of divorcement when such an alliance is once perpetrated. In his presidential address before the Missouri State Medical Association recently, Dr. Emmett P. North made an impassioned plea for a final fumigation so that Missouri may make a clean start. He called attention to the weakness of the medical practice act, and to the facts that Missouri has three out of six of the nonreputable schools in the United States, that there is an apparent reticence on the part of the newly established state board of health to take any drastic action against recognized offenders, and that the time is ripe for all persons interested in honest medical practice to unite on a medical practice act which will serve to protect the public. In the *Missouri State Medical Journal* for June, the editor, Dr. E. J. Goodwin, enforces the statement of Dr. North, and in the name of the organized medical profession calls on the newly established state board of health to organize officially, to revoke licenses obtained through fraud, and specifically to prosecute vigorously the revocation of license of Dr. R. B. Horton, whose record in relation to the licensure scandals in Missouri has appeared both in medical periodicals and in the public press. The insinuation has been made repeatedly that medical licensure in Missouri has been, and is, closely linked with the general conduct of state affairs, and that the governor of the state has not been above mingling in these matters to the interest of those who have sought and to whom he has owed political preference. The recognition and rewarding of those who aid our office-holders to high positions is not an unusual feature of county, state, or even national American politics. However, most of the great statesmen of all time have recognized that the care of the public health is the first interest of the state. The unqualified, incompetent, dishonest practitioner, licensed to practice by the state and practicing his type of medicine while skulking in the shadows of legal recognition, is a greater menace to public health than the nostrum vender or the forthright charlatan. If the members of the state board of health of Missouri are sincere in their wish to fulfil honorably the positions to which they have been appointed and to protect the public against unqualified practitioners, they will not hesitate to take up the challenge issued by the officers of the state medical association, and to prosecute to the utmost such obvious offenders as have been called to their attention.

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[7] Validity of Proceedings for Revocation of License, J. A. M. A. 84: 1073 (April 4) 1925.

[8] The New York Academy of Medicine Public Health Committee Report for the year 1925.

[9] Stryker, L. P., cited in A. M. A. Bull. 21: 121 (May) 1926.

WHAT ABOUT YOU?

This month, an information card is being sent from the headquarters office of the American Medical Association to every physician in the United States and Canada. On it, the recipient is asked to place certain information to be used in compiling the tenth edition of the American Medical Directory, which is now being prepared in the biographic department of the Association. The directory has assumed a place of importance in American medical life and has established itself as one of the most significant of the altruistic efforts of the Association in the interest of the medical profession and for the protection of the public. In it, as in no other published directory, may be found dependable data concerning physicians, hospitals, organizations and medical activities. Physicians who receive the card are asked to fill it out and return it promptly to this office, whether or not any change has occurred in the information specified. Should the reader fail to receive the card before the first of August, he will aid by writing to the headquarters office, stating that fact and indicating whether or not any change is to be made in the information published in the current issue of the directory.

Cost of Public Health Nursing.—In the large cities surveyed in 1924 by the U. S. Public Health Service, the municipal expenditures for public health nursing varied from 1.5 cents to 36.6 per capita, with an average of 15.4 cents, as compared to 9.5 cents for the same group in 1920. It is evident that such an expenditure falls far short of the average cost per capita of 83 cents proposed in the "ideal" plan. It should be remembered, however, that this plan included the cost of private as well as official nursing, and that the figures for the 1924 surveys include only the municipal service. It should be noted that the estimate of 83 cents per capita is equal to or greater than the sum which is now being expended for all strictly health work by many cities, including nursing services. This does not mean that the estimate for nursing is high, but that the expenditure for health work is low.—Cumming, Hugh: *Pub. Health Rep.* **41**:380 (Feb. 26) 1926.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

CONNECTICUT

Memorial to Beaumont.—A memorial will be unveiled at Lebanon, Conn., June 29, to Dr. William Beaumont, the pioneer American physiologist and distinguished member of the U. S. Army Medical Corps. Dr. Beaumont was born in Lebanon, Nov. 21, 1785, and made most of his observations on Alexis St. Martin, a Canadian, who suffered a permanent gastric fistula, following an accidental gun-shot wound. The Michigan Medical Society, to which Beaumont reported his studies in 1827, erected a monument on Mackinac Island near the spot where these immortal studies were begun. Lafayette B. Mendel, Ph.D., Sterling professor of physiologic chemistry, Yale University Medical School, is president of the Beaumont Medical Club.

Clinical Congress of State Society.—The second clinical congress of the Connecticut State Medical Society will be held in Sprague Memorial Hall, Yale University, New Haven, September 21-23. There will be nineteen papers presented, a round table discussion on periodic health examinations the first evening, and a smoker at the New Haven Lawn Club the second evening. The university has assigned a dormitory for the use of the congress, where rooms at $1.50 per night may be secured; if hotel accommodations are preferred, reservations should be made directly with the hotel. The university dining hall will be in operation, and luncheon will be provided for members without extra charge. Twenty-four hour telephone service will be maintained so physicians may be kept in touch with their offices. Among those who have accepted invitations to speak are Dr. John Shelton Horsley, Richmond, Va.; Dr. Hugh Cabot, Ann Arbor, Mich.; Drs. *Henry A. Christian and Charles F. Painter, both of Boston*; Drs. Edward L. Hunt, New York; Arthur C. Christie, Washington, D. C.; Robert B. Osgood, Boston; John O. Polak, Brooklyn, and Roger H. Dennett, New York. There will be a fee of $10, which includes admission to all sessions, the luncheons, smoker, parking space and garage, and a copy of the abstracts of papers presented. Inquiries should be addressed to Dr. Creighton Barker, 129 Whitney Avenue, New Haven.

FLORIDA

State Medical Election.—Dr. Henry Mason Smith, Tampa, was elected president of the Florida Medical Association at the recent annual meeting in Gainesville; Drs. Frederick J. Waas, Jacksonville, James Maxey Dell, Gainesville, Arthur G. Fort, Miami, vice presidents, and Dr. Shaler A. Richardson, Jacksonville, secretary-treasurer (reelected). The next meeting will be at West Palm Beach.

Midwives Fined.—The state board of health notes that Nettie Troublefield, Miami, was fined $54.84, April 8, for practicing midwifery without a certificate from the city department of health, and that Druscilla Edden was fined $29.85 at Miami, March 23, "for attempting to practice a certain branch of medicine on a patient after having been refused a certificate to practice midwifery."

GEORGIA

University News.—The University of Georgia conferred the degree of doctor of medicine on twenty-three graduates of the medical school, May 31, among whom was Loree Florence, who, according to the Augusta *Chronicle*, is the first woman to receive the degree of doctor of medicine from the University of Georgia. Following a meeting of the board of directors of the medical college, the resignation of Dr. Eliot R. Clark, professor of anatomy, was announced; Dr. Clark goes to the anatomy department of the University of Pennsylvania School of Medicine, Philadelphia.

Alumni Week Clinics.—The state board of health, cooperating with the School of Medicine of Emory University and the U. S. Public Health Service, conducted clinics and lectures, June 7-11, devoting the afternoons especially to venereal disease, when graduate physicians were given an opportunity to assist in the treatment of patients. Atlanta hospitals kept "open house," and physicians over a large territory were invited to be present. A complimentary dinner was given by the Atlanta Alumni of Emory University. There were also surgical and medical clinics, clinicopathologic conferences, and symposiums. This postgraduate study was the seventh annual institute-clinic on venereal diseases of the state board of health in cooperation with the Public Health Service.

ILLINOIS

Society News.—Dr. Herman L. Kretschmer, Chicago, addressed the Sangamon County Medical Society, Springfield, June 3, on "Urology and Its Relation to General Medicine and Surgery," illustrated by lantern slides.——The Illinois State Medical Society, at its recent annual meeting, established a section of radiology. There are now said to be five state societies which have sections of radiology—Wisconsin, Texas, Massachusetts, Louisiana and Illinois.——Dr. Gustaff H. Mundt, Chicago, president-elect of the Illinois State Medical Society, addressed the Vermilion County Medical Society, June 1, on "The Value of a Medical Society to the Physician."

Chicago

University News.—Graduates of Rush Medical College had contributed $230,000 up to June 5 toward the alumni quota of $2,000,000 in the University of Chicago's endowment drive; their self-made goal is $250,000. Graduates of Rush in forty-one states, three territories and five foreign countries have subscribed; 500 Rush Alumni in Chicago gave $124,475.

Society News.—The last meeting of the year of the Chicago Council of Medical Women will be June 22, at the Men's City Club, 315 Plymouth Court. Dinner at 6:30 p. m. at $1.50 per plate will precede the meeting; the chief speaker will be Dr. Georgine M. Luden, an associate in the research department of the Mayo Clinic, Rochester, Minn.; the other guest of honor and speaker will be Dr. Bertha Van Hoosen.——Dr. Isaac A. Abt was elected president-elect of the Chicago Medical Society, June 15, and Dr. Frank R. Morton, secretary.

Summer Clinics at Cook County Hospital.—Under the auspices of the Chicago Medical Society, the staff of Cook County Hospital will give two courses of two weeks of clinics, July 19-31 and August 1-14. There will be no fee and no diplomas given, and admission will be by card only, which will be sent to those who register early in reply to more than 10,000 letters mailed by the Chicago Medical Society to physicians in the state. The number which can be accommodated is limited. The clinics will cover general medicine and surgery and many of the specialties.

Personal.—Dr. Frank Billings received the honorary degree of doctor of science at the commencement exercises of Northwestern University, June 14.—A dinner dance, under the auspices of the North Side Branch of the Chicago Medical Society, was given at the Edgewater Beach Hotel, June 12, in honor of Dr. Charles J. Whalen, a former president of the Chicago Medical and the Illinois State Medical societies.——Dr. William Allen Pusey, formerly President of the American Medical Association, gave the commencement address at the University of Illinois School of Medicine, June 12.——Dr. John Ridlon received the honorary degree of doctor of science at the commencement of Tufts College, Boston, June 14.——The honorary degree of doctor of science was conferred on Dr. Frank Smithies by Washburn College, Topeka, Kan., June 2.——Dr. Bertha Van Hoosen recently received the honorary degree of LL.D. from Loyola University.

LOUISIANA

University News.—The senior class of Tulane University of Louisiana School of Medicine, New Orleans, June 8, presented to the school a portrait of Dr. Rudolph Matas, professor of surgery, which was painted by Harry Armstrong Nolan.

Supreme Court Refuses Chiropractors' Writ.—Having been sentenced by Judge Byrnes, New Orleans, to ten days in jail and a fine of $50 for practicing chiropractic in violation of an injunction issued by the court two years ago, Walter W. and Joseph B. Fife appealed to the state supreme court for a writ to restrain the judge from enforcing the sentence. The supreme court refused, May 12, to issue the writ. This is said to be the second time the Fife brothers have been punished for contempt of court (THE JOURNAL, July 7, 1923).

House Passes "Hospital Abuse Bill."—The lower house of the state legislature passed a bill, June 3, which would require each applicant for admission to the charity hospitals in New Orleans and Shreveport, except in cases of immediate emergency, to fill out blanks to show whether the applicant is able to pay. The bill provides that an applicant who is able to pay for his care and treatment shall be rejected, and that if after such patient has been admitted it is found that he misrepresented his financial condition, he will be subject to prosecution.

MARYLAND

Personal.—Dr. Susanne R. Parsons of the Baltimore City Health Department has resigned, effective, June 15.——H. A. B. Dunning, Baltimore, has been awarded the Remington Honor Medal of the New York Branch of the American Pharmaceutical Association for successfully directing the campaign to raise $1,000,000 for a headquarters building for the national pharmacy association.——Dr. Charles W. Maxson, Baltimore, was elected president of the Alumni Association of the Medical Department, University of Maryland, at the recent annual meeting in Baltimore.

Hospital News.—Largely with funds left by Mrs. Helen Turner, a building will be erected for the James Lawrence Kernan Hospital and Industrial School for Crippled Children, and six beds at the Eudowood Sanatorium will be provided. The new building at Kernan's Hospital will be especially equipped to treat diseases of the spine and bones; construction will start this summer. Mrs. Turner bequeathed about $80,000 to each institution, which will be increased to about $100,000 on the death of certain life tenants. About $45,000 has been raised from other sources to help pay for the new building.

MICHIGAN

Postgraduate Conference.—A postgraduate conference was held in Michigan at Alpena, May 6, to which some physicians traveled as far as 250 miles; every resident physician of Alpena was present, and the parent teacher association and the Rotary Club participated in the program of the conference. Three hundred other citizens attended the meeting. Dr. William H. Marshall, Flint, spoke on "Physical Examination with Demonstration," and Dr. Walter H. MacCraken, dean and professor of pharmacology and therapeutics, Detroit College of Medicine and Sugery on "Advances in Therapeutics." Following the program, there were dancing and light refreshments.

Personal.—Dr. Albert C. Kerlikowske has been appointed chief resident physician at the University Hospital, Ann Arbor.——Dr. Silas B. Frankhauser has been elected mayor of Hillsdale.——Dr. Roy C. Perkins has been elected chief of staff of Mercy Hospital, Bay City.——Dr. James H. Dempster, Detroit, has been elected president of the Wayne County Medical Society for the ensuing year.——Dr. S. Rudolph Light has been elected president of the Kalamazoo County Tuberculosis Association.——Dr. Gertrude O'Sullivan has resigned as city health officer for Port Huron.——Dr. Hugh Cabot, dean and professor of surgery, University of Michigan School of Medicine, Ann Arbor, took charge of Sir Holburt Waring's surgical clinic at St. Bartholomew's Hospital, London, England, from May 31 until June 12, and during that time, according to the *Lancet*, delivered two lectures at the medical school on "Nontuberculous Infections of the Kidneys," another on "The Present Position of Prostatic Surgery," and another on "Tuberculous Disease of the Kidney."

MINNESOTA

Personal.—Dr. Alfred E. Comstock, St. Paul, has been elected secretary of the state board of medical examiners to fill the vacancy caused by the death of Dr. Thomas McDavitt; the office of the secretary has been moved to 636 Lowry Building, St. Paul.——According to the *Journal-Lancet*, Dr. Walter L. Taft will be a candidate for the office of city coroner of Minneapolis; Dr. Frederick H. Rollins, St. Charles, is a candidate for the state senate.

New Hospital in Midway District.—The Northwestern Hospital Association is constructing a $750,000 hospital on an eight acre tract in the Midway District between St. Paul and Minneapolis which, it is expected, will be ready for occupancy, August 1; construction work started last July. The building is fireproof and in other respects of the most modern type of construction. The Northwestern Baptist Hospital Association, which began its work twenty-one years ago, when the Mounds Park Sanatorium, St. Paul, was opened, now cares for about 3,500 patients annually and its free service to the sick has increased in proportion to its growth.

Society News.—The Minnesota Academy of Ophthalmology and Oto-Laryngology elected Dr. John L. Shellman, St. Paul, president, May 14; Drs. Walter E. Camp, Minneapolis, and Frank N. Knapp, Duluth, vice presidents, and Dr. John H. Morse, Minneapolis, secretary-treasurer.——Dr. George E. Fahr, Minneapolis, was elected president of the Minnesota Pathological Society, May 11; Dr. Wallace H. Cole, St. Paul, vice president, and Dr. Elexious T. Bell, Minneapolis, secretary-treasurer.——Drs. William J. and Charles H. Mayo, Rochester, addressed the annual meeting of the American Surgical Association, Detroit, May 24-26, on "Rehabilitation of the Surgical Patient Through Biochemical Methods" and "The Gallbladder of 1926," respectively.

NEW HAMPSHIRE

State Medical Election.—At the one hundred and thirty-fifth annual meeting of the New Hampshire State Medical Society, Concord, May 26, Dr. David W. Parker, Manchester, was elected president; Dr. Emery M. Fitch, Claremont, vice president; Dr. Dennis E. Sullivan, Concord, secretary-treasurer (reelected), and Dr. Joseph J. Cobb, Berlin, speaker of the house of delegates. Dr. Thomas W. Luce, Portsmouth, is the retiring president. The next meeting will be held at Portsmouth in 1927.

NEW JERSEY

Hospital News.—Citizens of Princeton launched a campaign, June 1, to raise $600,000 for a new Princeton hospital, the capacity of which will be fifty-six beds. The first day of the drive for a community hospital netted more than $140,000; the largest donation was $37,500, by George A. Armour and family, for an operating room; Mr. and Mrs. Gerard B. Lambert gave $24,000; two children contributed all they had in the bank, a total of twenty-eight cents; an anonymous gift of $6,000 was made in memory of Isabella McCosh, wife of a former president of the university, in whose honor the university infirmary is named.——The cornerstone of the new $300,000 Dover General Hospital was laid, April 25.——The Presbyterian Hospital, Newark, is conducting a campaign for $450,000 for a new building.——The Dr. E. C. Hazard Hospital, Long Branch, is building a $75,000 addition.

Illegal Practitioners in Court.—The following persons have recently been brought into court charged with practicing medicine, chiropractic or midwifery without a license:

Albert H. Smith, a druggist, Bradley Beach (fined).

J. Harry Hayes, a druggist, Asbury Park (fined).

Ferdinand Boutel, formerly of Elizabeth (fined).

James C. Van Middlesworth, Elizabeth (fined).

Lillian Carter, Camden (committed to jail for twenty days).

George Schaefel, Oaklyn (fined).

Mary Jergufski-Hammon, a midwife, Trenton (fined).

Anna Falcone, a midwife, Passaic (fined), for practicing midwifery without a license.

Carmela Suco, Passaic, committed to jail for sixty days.

Henry P. Livesey, Arlington, a licensed chiropractor who was practicing electrotherapeutics in connection with the practice of chiropractic (fined).

Margaret Lehman, Trenton (fined).

Edward E. Garlits, proprietor of a health food store, Trenton (fined).

Herman North, Bloomfield, a druggist (fined).

Anna Antolik, Whippany, an unlicensed midwife, and Anna Kudelka, Boonton, an unlicensed midwife, and Adolph Schror, Rockaway Valley, were each tried for practicing medicine without a license, and judgment entered for the penalty and costs, but each filed notice of an appeal.

NEW YORK

Control of Venereal Disease.—The director, division of social hygiene, state department of health, summarizes the activities in New York, exclusive of New York City, for the control of venereal disease from 1919 to 1925. He says, there were 4,383 lectures attended by 509,869 persons, and 3,241,576 pamphlets distributed, and 32,089 patients who were unable to pay for medical attention treated at the free clinics. There were 28,777 cases of syphilis in New York last year. There are ninety-one laboratories approved for the examination of "smears," sixty-seven laboratories approved for dark field examinations for syphilis, and thirty-eight laboratories approved for performing the Wassermann test. There were examined during this period (1919-1925) 174,876 smears for gonococci, and 1,374,460 Wassermann tests made. The physicians, the public and the state are cooperating to control these diseases.

Society News.—Dr. William H. Ross, Brentwood, addressed the semiannual meeting of the Suffolk County Medical Society, Patchogue, May 18, on "The Influence of Diet in Chronic Arthritis," and Dr. Blake F. Donaldson, New York, held a clinic on nephritis.——Dr. Frederick C. Conway addressed the Medical Society of the County of Albany, June 8, on "Case of Pericarditis with Effusion"; Dr. Stanley E. Alderson, on "Case of Perforated Duodenal Ulcer"; Dr. Otto A. Faust, on "Case of Lung Abscess"; Dr. E. Martin Freund, on "Two Cases of Bronchial Asthma"; and Dr. John E. Heslin, on "Hematuria in the Male." The members of this society are invited to a clam-bake, June 24, given by the Berkshire District Medical Society at Pontoosac Lake, Pittsfield, Mass. ($5 per ticket). Ladies also are invited. There will be golfing and tennis.——At the first annual meeting of the Genesee County Medical Association, June 4, the guest of honor and chairman was Dr. Clement R. Jones, Pittsburgh, treasurer of the American College of Physicians; Dr. John Phillips, Cleveland, addressed the society on "Abdominal Conditions Which Are Essentially Nonsurgical"; Dr. Charles Gordon Heyd, New York, on "Differential Diagnosis of Surgical Conditions of the Upper Abdomen," and Dr. Ernst A. Pohle, University of Michigan School of Medicine, Ann Arbor, on "Therapeutic Use of Radiation with Special Consideration of Ultraviolet Therapy." Following the scientific meeting, there were golfing, tennis, hiking and swimming, and in the evening a dinner dance.

New York City

Society News.—About 100 physicians and guests attended the annual dinner dance of the Three Hundred and Second Medical Regiment at the Hotel Bossert, May 22.——The trustees of the New York Academy of Medicine and members of the public health committee gave a testimonial dinner to Dr. Charles L. Dana on the occasion of the fifteenth anniversary of the formation of the committee of which Dr. Dana is chairman.

Travel Study Club.—The Travel Study Club of American Physicians left for an eight weeks tour of Europe, June 12, to visit Norway, Sweden, Denmark, Germany, Switzerland, France and England. Ten days will be spent in Germany at Cologne, Dusseldorf, Neuenahr, Wiesbaden, Heidelberg and Baden-Baden, where special receptions and banquets will be given by the Kur-Administrations and their German colleagues. Dr. Louis L. Seaman is president of the club, and Dr. Richard Kovacs, secretary-treasurer.

Committee on Maternal Health.—Organized in 1923 to make a scientific investigation of contraception, sterilization and problems of sterility and fertility from a medical and public health point of view, the Committee on Material Health has undertaken a clinical study of contraception, in which eight hospitals are cooperating. The clinical work aims (1) to provide medical advice for women who need advice about contraception to cure or prevent disease as permitted under the state [illegible] (2) to collect evidence as to conditions under which [illegible] for or against pregnancy should be given and, [illegible] collect histories of patients who use contraceptive methods under medical supervision. The committee, [illegible] offers an honorarium in order to secure complete histories, aims to keep patients under supervision for at least one year, and strictly limits itself to advising patients who present medical indications. It is expected that the study of these histories will help answer, scientifically, such questions as "What are the physiologic and psychologic effects of contraception on the individual?" "What are the effects of contraception on subsequent fertility?" and "What are the relative values of contraceptives as to reliability, simplicity and harmlessness?" The committee also aims to promote research on problems of sterility and fertility. Reports will be issued to the medical profession from time to time; a great deal of opinion on these questions through interviews in Europe and America, has been collected, but the opinions differ widely, and an unbiased investigation is being made of the facts. The medical members of the committee are Drs. Samuel W. Lambert, chairman; Robert L. Dickinson, secretary; Haven Emerson, Robert T. Frank, Frederick C. Holden, George W. Kosmak, James Pedersen and William F. Snow; the office is at 370 Seventh Avenue.

NORTH CAROLINA

Hospital News.—More than $80,000 had been obtained at last report in the campaign to raise $100,000 for the erection of a hospital for negroes at Greenboro.——Haywood County approved, June 5, a bond issue of $100,000 to establish a county hospital in the county seat, Waynesville.

Initial Payment by Duke Foundation.—The Duke Endowment Headquarters at Charlotte mailed checks recently to hospitals not operated for private gain and to orphanages in North and South Carolina, amounting to $267,912.95. This was the initial instalment of payments (THE JOURNAL, Dec. 20, 1924, p. 2027).

Personal.—Dr. George Fletcher Reeves, Winston-Salem, has been elected full-time health officer for Nash County, and will take up his duties, July 1.——Dr. Vincent W. Archer, formerly of Black Mountain, who has been elected professor of roentgenology in the Medical School of the University of Virginia, will assume charge of that department at the opening of the fall term.

Four Months on the Road Gang.—About twenty-five negroes were witnesses in the trial of William Lowery, a Croatan Indian, in the superior court at Clinton, May 13, who was charged, it is reported, with practicing medicine without a license. Lowery is said to have traveled about the community selling medicines prepared by himself and offering to cure various ailments for a certain sum of money. Judge Bond sentenced the "doctor" to serve four months on the county roads.

OHIO

Society News.—Drs. Preston M. Hickey, Aldred S. Warthin and Frank N. Wilson of the University of Michigan Medical School, Ann Arbor, held "A Pathologic and Roentgenologic Conference on Proved Cases" before the Academy of Medicine of Toledo and Lucas County, Toledo, June 4.——Dr. Karl D. Figley, Toledo, addressed the Sandusky County Medical Society, Fremont, May 20, on "Periodic Health Examinations."——The Montgomery County Medical Society was the guest, on the occasion of its annual meeting, of Dr. Charles B. Rogers at the Orchard Springs Sanatorium, near Dayton; Dr. Max Ballin, Detroit, addressed the society on "Abdominal Diagnosis and Surgery."——Dr. Henry Kennon Dunham of the University of Cincinnati College of Medicine addressed the Columbiana County Medical Society, East Liverpool, June 10, on "Importance of Exact Diagnosis and Classification of Lung Lesions."

Personal.—Dr. Charles H. Pelton has resigned as superintendent of the Memorial Hospital, Elyria, and Mr. John Mannix, of Mount Sinai Hospital, Cleveland, has been appointed superintendent.——Dr. Eli R. Crew, superintendent, Miami Valley Hospital, Dayton, was chosen president elect of the Ohio Hospital Association at the recent annual meeting in Columbus.——Mr. A. G. Stouder, Troy, recently gave $200,000 to that city for the erection of a memorial hospital to be known as the Stouder Memorial.——A dinner in honor of Dr. John N. Lenker, Cleveland, was given, May 21, by the staff and trustees of St. Luke's Hospital; Dr. Lenker, who has been associated with this hospital for twenty-five years, had just returned from an extended trip around the world.——Dr. Benjamin A. S. Stephenson, Columbus, has been elected health officer of Hocking County and the city of Logan, to succeed Dr. William G. Rhoten, who has accepted a position as health officer of Wayne County.——Dr. William H. Eastman, Fredericktown, was elected president of the Knox County board of health at the annual business meeting, June 1.

PENNSYLVANIA

Mental Clinics.—Regular mental clinics were recently established in Clearfield and Venango counties, and occasional clinics in the public schools of Pike County and at the Brookville Red Cross. There are now forty-six regular mental clinics being conducted under the auspices of the bureau of mental health of the state department of welfare, and five occasional mental clinics.

Society News.—Dr. John B. Deaver, Philadelphia, addressed the Newcastle County Medical Society, May 18, on "Peritonitis."——Dr. James M. Anders addressed a joint meeting of the Montgomery County Medical Society and the local tuberculosis society, Norristown, June 2, on "Disease Prevention, with Especial Reference to Tuberculosis."——Dr. Thomas M. Mabon addressed the Allegheny County Medical Society, Pittsburgh, June 15, on "Myxedema" (lantern slides); Dr. Harvey E. Thorpe, "Slit Lamp Microscopy of the Living Eye," and Dr. Isaac L. Ohlman, "A Nonboiling Method of Sterilizing Syringes for Intravenous Work."

Philadelphia

Hospital News.—The $1,000,000 drive to enlarge the Bryn Mawr Hospital was oversubscribed, the grand total being $1,275,984, which does not include thousands of dollars given for memorials.

Dr. Sweet Goes to Cornell.—Dr. Joshua E. Sweet, who has conducted the department of surgical research at the University of Pennsylvania for twenty years, has accepted the chair of surgical research at Cornell University Medical College, New York; a dinner was given, June 5, in honor of Dr. Sweet; Dr. George M. Dorrance presided, and Drs. William Pepper, George W. Norris, Edward B. Krumbhaar and De Witt C. Guthrie were among the speakers.

Health Talks for the Public.—Under the auspices of the Philadelphia County Medical Society, addresses were delivered in the auditorium of the society's new home, Twenty-first and Spruce streets, by Dr. Wilmer Krusen, director of health, June 8, on "Health Problems of a Great City," by Dr. Frank C. Hammond, dean, Temple University School of Medicine; June 15, on "The Social Evil" (for men only), and by Dr. Harriet Hartley, June 15, on "Some Phases of Hygiene" (for women only).

Woman's Medical College.—At the seventy-fourth annual commencement of the Woman's Medical College of Pennsylvania, June 9, twenty-nine women received the degree of doctor of medicine; the commencement address was given by Dr. John A. Lichty, superintendent, Clifton Springs Sanatorium, Clifton Springs, New York. Following the commencement, a bronze tablet was unveiled in honor of Dr. Anna S. Kugler, '79, and Dr. Lydia Woerner, '99, both of whom spent many years in India as medical missionaries. The Lutheran Women's League of Philadelphia and vicinity presented the tablet together with two scholarships of $5,000 each, to provide for the training of medical missionaries. Ten of this year's graduating class expect to serve as medical missionaries in widely scattered foreign posts. During the annual meeting of the alumni association, June 10-11, there were scientific demonstrations and clinics, a banquet at the Bellevue-Stratford Hotel, business meetings, luncheons, and a visit to the proposed site of the greater Woman's Medical College, Henry Street and Abbottsford Road, Falls of Schuylkill.

RHODE ISLAND

Hospital News.—The Miriam Hospital, Providence, which was opened to the public last November, has opened an outpatient department with clinics in internal medicine, gynecology, surgery, diabetes, eye, ear, nose and throat and prenatal work.

State Medical Election.—At the one hundred and fifteenth annual meeting of the Rhode Island Medical Society, Providence, June 3, Dr. Herbert G. Partridge, Providence, was elected president; Drs. Norman M. MacLeod, Newport, and Arthur H. Harrington, Howard, vice presidents; Dr. Jesse E. Mowry, treasurer, and Dr. James W. Leech, 369 Broad Street, Providence, secretary. The principal speaker at the annual banquet was Charles U. Clark, Ph.D., Quebec, Canada. Dr. Charles L. Scudder, Harvard University Medical School, Boston, spoke at the morning session on "Operative Treatment of Fractures," and Dr. Howard E. Blanchard, Providence, on "Corrective Rhinoplasty," illustrated by moving pictures, through the courtesy of Dr. Joseph Eastman Sheehan, New York; at the afternoon session there was a symposium on "Cancer" by members of the staff of Memorial Hospital, New York.

TENNESSEE

Medical School Adopts Quarter System.—It is reported that the trustees of the University of Tennessee have adopted the quarter system whereby by continuous study the two premedical and four medical years of work can be completed in as short time as four and a half years. Under this system, any three quarters will be considered the equivalent of one college year.

Health at Nashville.—Telegraphic reports to the U. S. Department of Commerce from sixty-four cities with a total population of about 29,000,000, for the week ending May 22, shows the highest mortality rate for Nashville (21.3), and a mortality rate for the group of cities of 13.3. In the corresponding week last year the mortality rate for Nashville was 18.4, and for the group of cities, 12.9. The annual rate for the sixty-four cities for the twenty-one weeks of 1926 was 15.5, while for the corresponding period last year it was 14.2.

Society News.—At the sixty-third semiannual meeting of the Middle Tennessee Medical Association, Springfield, May 21, Dr. Thomas D. McKinney, Nashville, was elected president; Dr. William W. Porter, Springfield, vice president, and Dr. Sam P. Bailey, Nashville, secretary-treasurer, reelected. The next meeting will be held at Dickson.——At the thirty-fifth annual meeting of the West Tennessee Medical and Surgical Association, Dr. Richard M. Little, Martin, was elected president; Dr. William C. Duckworth, Jackson, vice president; Dr. Isaac A. McSwain, Paris, secretary-treasurer, reelected, and Dr. George R. McSwain, Paris, assistant secretary. The next annual meeting will be at Dyersburg.

WASHINGTON

Hospital News.—The Oakhurst Tuberculosis Sanatorium at Elma will construct a $50,000 hospital for male patients.——Brig. Gen. Frank T. Hines has ordered the construction of an infirmary building for the tuberculous patients at the Veterans' Bureau Hospital, Walla Walla.

Personal.—Dr. Edward J. Lawrence, Spokane, has been elected president of the University Club of that city.——Dr. and Mrs. George S. Allison, Spokane, recently celebrated their golden wedding anniversary.——Dr. Frances R. McLoughlin, Seattle, has been appointed, by the governor, to the state institutional board of health.

Osteopaths Want to Prescribe Narcotics.—Having been refused registration under the Harrison Narcotic Act, by the collector of internal revenue, certain osteopaths of the state petitioned for, and received, a writ of mandamus directing the internal revenue collector to register one W. E. Waldo, Seattle, before June 21, or show cause in court for failing to comply. The state law, known as the Beeler Act, prohibits the possession, sale and use of narcotic drugs, except by "physicians, dentists, surgeons and veterinarians," and, in the opinion of the assistant state attorney general, osteopaths are not included in the excepted classification. The osteopaths have not only been refused registration under the state law, but have been called on to turn in at once all narcotic drugs they may have in their possession.

WEST VIRGINIA

Personal.—Drs. Robert J. Reed and Frank LeMoyne Hupp, both of Wheeling, received the honorary degree of doctor of science from Washington and Jefferson College, Washington, Pa., June 16.——Dr. Garner Scullard, Pittsburgh, has been appointed pathologist at the Ohio Valley General Hospital, Wheeling.

State Medical Election.—At the recent annual meeting of the state medical association, Morgantown, Dr. Chester R. Ogden, Clarksburg, was elected president; Drs. Charles B. Wylie, Morgantown, Claude A. Frazier, Powellton, and Edmund L. Armbrecht, Wheeling, vice presidents; Dr. Thomas Maxfield Barber, Charleston, treasurer, and Mr. Sterrett O. Neale, Charleston, executive secretary. The next annual meeting will be in White Sulphur Springs.

Society News.—Dr. Hanson S. Ogilvie, Charleston, recently addressed the Mercer County Medical Society, Bluefield, on "Simple Diagnostic and Therapeutic Principles in Neurology."——Dr. Charles H. Clovis, Wheeling, has been elected president of the Ohio County Medical Society, and Dr. John W. Gilmore, Wheeling, vice president; Dr. Walter D. Wise, Baltimore, recently addressed the society on "A Plea for Earlier Operation in Surgical Conditions of the Biliary Tract."——The Upshur County Medical Society was reorganized in May, and Dr. Everett Walker, Adrian, was reelected president; Dr. Lowry W. Page, Buckhannon, vice president, and Dr. Leonard W. Deeds, Buckhannon, secretary.

WISCONSIN

Personal.—An award of $25,000 has been approved by the Mixed Claims Commission, representing the United States and Germany, to the widow of Dr. Edmund F. Woods, Janesville; Dr. Woods lost his life when the *Arabic* was sunk by a German submarine off the coast of Ireland, Aug. 19, 1915.

University News.—Dr. Arno B. Luckhardt, professor of physiology, University of Chicago, addressed the University of Wisconsin Medical Society, recently, on "Ethylene-Oxygen and Acetylene-Oxygen Anesthesia," and the medical students of the University of Wisconsin on "The Physiology of the Parathyroid Gland."

Society News.—Dr. Louis M. Warfield, Milwaukee, addressed the Dodge County Medical Society, Beaver Dam, recently, on "Diseases of the Heart."—Dr. Charles Eugene Riggs and Dr. William H. Hengstler, St. Paul, addressed the Douglas County Medical Society, Superior, May 5, on "Sleeping Sickness."——Dr. Erwin R. Schmidt, professor of surgery, University of Wisconsin Medical School, Madison, addressed the Sauk County Medical Society, May 19, on "The Surgical Aspect of the Acute Abdomen in Babies and Young Children"; and Dr. Roscoe L. McIntosh, University of Wisconsin Medical School, addressed the society on "Treatment of Diseases of the Skin."——Dr. Herman E. Wolf, La Crosse, was elected president of the Seventh Councilor District Society, and Dr. Dean S. Smith, La Crosse, secretary, at the meeting at Sparta.——The Ninth Councilor District Society met, May 13, at Stevens Point; Dr. Arthur J. Patek, Milwaukee, held a clinic in the afternoon, and the evening was given over to a symposium on periodic health examinations, which was followed by a general discussion. Dr. Donald Waters, Wisconsin Rapids, was elected president of the society, and Dr. Joseph F. Smith, Wausau, secretary, reelected.——Twenty-three physicians of Fond du Lac donated their services recently to make thorough physical examinations of more than 600 children in the first grades of the public schools.

GENERAL

Is Cancer Increasing?—There were 99,138 deaths recorded in 1924 in the registration area of the United States as directly due to cancer, according to the Public Health Service. These figures are based on returns from the registration area, which comprises 88.4 per cent of the total population. On the basis of these reports, the rate of deaths from cancer per hundred thousand of population was 92. In 1923, the rate was 89.4, while in 1900 the reports revealed the rate to be 63.

Automobile Fatalities.—The department of commerce announces that reports on automobile fatalities from seventy-nine large cities in this country for the four week period ending May 22 shows that the total number of persons killed was 487, as contrasted with 426 for the corresponding four weeks in 1925. Eight of the cities reporting had no automobile fatalities during this period this year, while for the corresponding period last year eleven cities had no automobile fatalities. New Bedford, Mass., it is said, has a "clean sheet" for the last twenty weeks.

Prizes for Improvement in Medical Equipment.—The International Committee of the Red Cross has provided, in accordance with a decision of the Twelfth International Red Cross Conference, 100,000 Swiss francs for prizes and competitions in an effort to improve and standardize some articles of medical equipment. The competitions will apply to stretchers, devices for suspending stretchers, individual packages for dressings, cards for wounded men, and identification tags; they will take place at Geneva this fall, but the objects entered in the competitions must reach the International Committee of the Red Cross, 1, Promenade du Pin, Geneva, before August 1, and must be marked "material intended for the institute for international examination of medical equipment," so they will be exempt from custom duties. The international committee will be grateful to receive from persons interested in perfecting medical equipment, supplementary funds to enable it to increase the value of the prizes to be given. An international technical commission will act as the jury of awards.

Pacific Northwest Medical Association.—The annual meeting of this association will be at Spokane, Wash., July 1-3, at the Davenport Hotel, the meeting place having been changed from Glacier Park because the hotels could not promise to provide sufficient facilities. The Pacific Northwest Orological Society and the Pacific Northwest Orthopedic Society will meet jointly with the medical association. Among many prominent speakers will be Dr. George Dock, Pasadena, Calif., whose subjects will be the anemias and the nephropathies and a clinic; Dr. John Whitridge Williams, Johns Hopkins University School of Medicine, Baltimore, whose several subjects relate to obstetrics; Dr. Arthur Steindler, State University of Iowa College of Medicine, Iowa City, whose subjects relate to orthopedic surgery; Dr. George W. Holmes, roentgenologist, Massachusetts General Hospital, Boston; Dr. Harry L. Parker, Mayo Clinic, Rochester, Minn., "Diagnosis of Suppurative Diseases of the Central Nervous System" and "Clinical Signs and Symptoms of Neuritis"; Dr. Howard Lilienthal of Cornell University Medical College, New York, surgical treatment of pulmonary tuberculosis and of nontuberculous suppuration; Dr. Alfred W. Adson, neurologist, Mayo Clinic, Rochester, Minn.; Dr. George H. Semken, surgeon in chief, New York Skin and Cancer Hospital; Dr. Albert Keidel, Johns Hopkins University School of Medicine, Baltimore; Dr. E. H. Mason, McGill University Faculty of Medicine, Montreal, and Dr. Hans Lisser, of the University of California Medical School.

Pan-American Red Cross Conference.—About 250 foreign guests from more than thirty countries, representing national and international medical and nursing societies, met with delegates from national Red Cross societies in the Western Hemisphere at the second Pan-American Red Cross Conference, Washington, D. C., May 25-June 5. President Coolidge, as head of the American Red Cross, welcomed the delegates. The conference was sponsored by the League of Red Cross Societies, representing fifty-four member nations. The first Pan-American Red Cross Conference was held at Buenos Aires in 1923; the third will be held at Rio de Janeiro, about 1930. With the business of the conference, there were interspersed official dinners, receptions, luncheons and excursions in honor of guests, a visit to Mount Vernon to place a wreath, a gift of the conference, on the tomb of George Washington, and to Warrenton, Va., to the estate of the Hon. Oscar T. Crosby, former assistant secretary of the U. S. Treasury. Among the resolutions adopted by the conference were that: (1) child welfare is a proper activity for the Red Cross; (2) it should participate in the prevention of blindness, as well as in the creation of working homes for the blind; (3) Red Cross societies should take such action as will enable teachers to advise medical examination of every child who seems to suffer from an infection of the tonsils; (4) Red Cross societies should take steps for governments to establish (or to do so themselves) special health courses in which special teachers would be trained in the teaching of hygiene in the public schools; (5) the Red Cross societies should undertake the teaching of health principles with a view to develop a public conscience in the great medical and social problems, and (6) Red Cross societies should take steps to introduce in local newspapers, daily, weekly or biweekly service, giving practical information and advice on health matters.

Activities of Rockefeller Foundation in 1925.—Through its departmental agencies (the International Health Board, the China Medical Board, the Division of Medical Education, and the Division of Studies), the Rockefeller Foundation spent $9,113,730 during 1925. George E. Vincent, Ph.D., the president, states in his annual review that the foundation engaged in the following activities:

(1) Aided the governments of eighteen countries to combat hookworm disease; (2) gave funds to the budgets of organized rural health services in 220 counties in twenty-six American states and in eighteen districts in Brazil, Poland, Czechoslovakia, Austria and France; (3) took precautionary measures against yellow fever in Salvador, Guatemala, Nicaragua and Honduras; (4) continued to work with Brazil in freeing its northern coast from this disease; (5) sent a yellow fever commission to the West Coast of Africa; (6) helped to show the possibilities of malaria control in twelve American states, and in Brazil, Argentina and Italy; (7) shared in the development of professional training of public health officers at Harvard University and the University of Toronto and in schools and institutes in London, Copenhagen, Prague, Warsaw, Belgrade, Zagreb, Budapest, Trinidad and São Paulo; (8) contributed to the progress of medical education at Cambridge, Edinburgh, Copenhagen, Brussels, Utrecht, Strasbourg, Beirut, Singapore, Bangkok, São Paulo and Montreal; (9) provided emergency aid in the form of literature and laboratory supplies for 112 medical centers in Europe; (10) maintained a modern medical school and teaching hospital in Peking with 164 students and fifty-five teachers; (11) aided two other medical schools and nineteen hospitals in China; (12) helped to improve the teaching of physics, chemistry and biology in three Chinese and seven foreign institutions in China and in the government university of Siam; (13) supported nurse training courses in Peking Union Medical College, Yale University, Vanderbilt University and the George Peabody College for Teachers, and contributed to nursing education and service in Brazil, France, Jugoslavia and Poland; (14) provided current funds for an Institute of Biological Research in the Johns Hopkins University; (15) assisted departments at Yale and Iowa State universities engaged in biologic and mental research, and aided the Marine Biological Station at Pacific Grove, Calif.; (16) provided, directly or indirectly, fellowships for 842 men and women from forty-four different countries, and financed the travel of fifty other persons either in commissions or as visiting officials and professors; (17) contributed to the League of Nations international study tours or interchanges for 128 health officers from fifty-eight countries; (18) continued to aid the league's information service on communicable diseases; (19) made surveys of health conditions, medical education, nursing, biology and anthropology in thirty-five countries; (20) lent staff members as advisers and made minor gifts to many governments and institutions; (21) assisted mental hygiene projects both in the United States and Canada, demonstrations in dispensary development in New York City, and other undertakings in public health, medical education and allied fields.

Society News.—At the recent annual meeting of the American Pediatric Society, Dr. Isaac A. Abt, Chicago, was elected president; Dr. Royal S. Haynes, New York, vice president; Dr. Clifford G. Grulee, Chicago, editor, and Dr. Howard C. Carpenter, 1805 Spruce Street, Philadelphia, secretary-treasurer.—The American Otological Society has elected Dr. Arthur B. Duel, New York, president for the ensuing year; Dr. Max A. Goldstein, St. Louis, vice president, and Dr. David Harold Walker, 390 Commonwealth Avenue, Boston, secretary-treasurer.——At the annual meeting of the American Laryngological Association, June 3-5, Dr. Chevalier Q. Jackson, Philadelphia, was elected president; Drs. Lewis A. Coffin, New York, and William V. Mullin, Cleveland, vice presidents; Dr. George Fetterolf, Philadelphia, treasurer, and Dr. George M. Coates, 1721 Pine Street, Philadelphia, secretary.——The American Urological Association elected Dr. John R. Caulk, St. Louis, president at the annual meeting, May 17-19; Dr. Richard F. O'Neil, Boston, president-elect; Dr. Homer G. Hamer, Indianapolis, secretary, and Dr. James B. Cross, Buffalo, treasurer.——Dr. Burt R. Shurly, Detroit, was elected president of the American Laryngological, Rhinological and Otological Society, at the meeting, Montreal, May 31-June 2; Drs. Hubert Arrowsmith, Brooklyn, John J. Shea, Memphis, Harry W. Lyman, St. Louis, William P. Wherry, Omaha, and Frank B. Kistner, Portland, vice presidents; Dr. Ewing W. Day, Pittsburgh, treasurer; Dr. George L. Richards, Fall River, Mass., editor, and Dr. Robert L. Loughran, 145 West Fifty-Eighth Street, New York, secretary.——At the meeting of the American Neurological Association, June 1-3, Dr. Peter Bassoe, Chicago, was elected president; Drs. Ernest Sachs, St. Louis, and James B. Ayer, Boston, vice presidents; Dr. Henry Alsop Riley, 870 Madison Avenue, New York, secretary-treasurer, and Dr. Clarence A. Patten, Philadelphia, assistant secretary.——Dr. Carroll L. Smith, Spokane, was recently elected president of the Pacific Coast Oto-Ophthalmological Society; Dr. William J. Mellinger, Santa Barbara, Calif., and Dr. Frank A. Burton, San Diego, vice presidents, and Dr. Walter F. Hoffman, Seattle, secretary-treasurer.——At the annual meeting of the National Association for the Study of Epilepsy, New York, June 7-8, Dr. George Kirby Collier, Rochester, N. Y., was elected president; Drs. Dan S. Renner, Skillman, N. J., and Thomas B. Bass, Abilene, Texas, vice presidents, and Dr. Arthur L. Shaw, 108 B. The Albiston, Utica, N. Y., secretary-treasurer. The next meeting will be at Cincinnati.——Dr. John Ruhräh, Baltimore, was elected president of the American Medical Library Association at the annual meeting in Ann Arbor, June 8-9; Dr. Harvey Cushing, Boston, vice president; Miss Sue Biethan, Ann Arbor, secretary, and Miss Metta Loomis, Chicago, treasurer.——The American Bronchoscopic Society elected Dr. Daniel Crosby Green, Boston, president; Dr. Sidney Yankauer, New York, vice president, and Dr. Henry B. Orton, 24 Commerce Street, Newark, N. J., secretary-treasurer at the annual meeting, May 29.——The American Psychopathological Association, at its annual meeting, June 11, elected Dr. Sanger Brown, 2d, New York, president; Drs. Ross M. Chapman, Towson, Md., and Edward J. Kempf, New York, vice presidents; Dr. William C. A. Garvin, Binghamton, N. Y., treasurer, and Dr. Martin W. Peck, Boston Psychopathic Hospital, Boston, secretary.

FOREIGN

Personal.—Prof. A. J. Clark has been chosen to succeed the late Prof. Arthur R. Cushny in the chair of materia medica and pharmacology at the University of Edinburgh.

Clinical Course in English.—The Faculty of Medicine of Paris offers a complementary, postgraduate course in mental diseases and diseases of the brain at the Neuropsychiatric Clinic, June 12 to July 12, under the direction of Prof. Henri Claude, in which there will be complementary explanations in English and Spanish. Applications should be made to the chief of clinic, Dr. Targowla, 1, Rue Cabanis, Paris.

Photographs in Court Prohibited.—The *Lancet*, May 29, notes that after June 1 physicians in England will be protected from a form of publicity which they sometimes encounter, but seldom enjoy in that country. On that day, a law becomes effective, which makes it an offense to photograph, in any court, any person who is a judge, a juror, a witness or one of the parties in the case. Any other kind of portraiture or sketching attempted in court with a view to publication is also prohibited, and photographing is deemed to occur in court if it takes place anywhere within the court buildings, or while the victim is entering or leaving the court room, or the precinct of the building. Violation of the new law is punishable, summarily, by a fine not to exceed £50.

Deaths in Other Countries

Stephen Paget, consulting aural surgeon, Middlesex Hospital, vice chairman, Research Defense Society, author of "Memoirs and Letters of Sir James Paget," "The Life of John Hunter" and of "Ambroise Paré and His Times," and many other volumes, May 8, aged 71.——**Ernest Septimus Reynolds**, emeritus professor of clinical medicine, University of Manchester, England, May 22, aged 65.

CORRECTION

Necropsy Percentage.—In the table in Dr. Henry A. Christian's article on "Selecting a Hospital for the Internship" (THE JOURNAL, May 15, p. 1500), the necropsy percentage for Johns Hopkins Hospital, Baltimore, should be 74.5 per cent instead of 84 + per cent.

Government Services

Navy Personals

Lieut. William Moore and Lieut., junior grade, George C. Main, have resigned from the medical corps of the navy.——Comdr. Abraham H. Allen has been ordered to duty on the U. S. S. *Mercy*.——Lieut. Comdr. Carl A. Broaddus, on completion of his course of instruction at the New York Post-Graduate Medical School and Hospital, will proceed to the naval hospital, League Island, Pa., for duty.——Lieutenants, junior grade, Sobisca S. Hall, naval hospital, New York, and Radford Brown, U. S. S. *Elcano*, have tendered their resignations from the medical corps of the navy.

Army School of Nursing

The graduating exercises of the Army School of Nursing were held in the Formal Garden, Army Medical Center, Washington, D. C., June 4; the Surgeon General, Major Gen. Merritte W. Ireland, presided and Mrs. Florence P. Kahn gave the address; Brig. Gen. James M. Kennedy, commanding officer, Army Medical Center, presented the diplomas, and Mrs. Henry R. Rea the Rea Medal, which was awarded to Barbarba Channing Miller of Vermont. There were forty-six graduates in the class.

U. S. Public Health Service

Surg. Roy P. Sandidge has been relieved from duty at Honolulu and assigned to the U. S. Quarantine Station, Rosebank, N. Y.——Asst. Surg. Lucius F. Badger, Jr., has been relieved from duty at Angel Island, Calif., and assigned to the U. S. Quarantine Station, Honolulu.——Surg. Ernest A. Sweet has been relieved from duty at Honolulu and directed to assume charge of the U. S. Quarantine Station at Fort Monroe, Va.——Surg. John W. Tappan has been relieved from duty at El Paso, Texas, and assigned to Fort Stanton, N. M.——Surg. J. G. Wilson has been relieved from duty at Los Angeles and directed to assume charge of service activities at El Paso.——P. A. Surg. Lieuen M. Rogers has been relieved from duty at Fort Stanton and assigned to duty at the hygienic laboratories, Washington, D. C.——Surg. Walter C. Teufel has been relieved from duty at Miami, Fla., and assigned to duty at Dublin, Ireland.——Surg. Lewis R. Thompson has been directed to proceed from Washington, D. C., to New York and return in connection with studies of posture and dust which the service is conducting.——Asst. Surg. Henry A. Rasmussen has been relieved from duty at Fort Stanton, N. M., and assigned to Ellis Island, New York.

Graduation at Field Service School

The U. S. Army Medical Field Service School, Carlisle Barracks, Pa., graduated a class of fifty-five members, June 3, thirty-two of whom were members of the medical corps, thirteen of the veterinary corps, eight of the dental corps, and two from the Cuban army. Lieut. Col. Charles R. Reynolds presented the diplomas; Col. Harlow Brooks, medical reserve corps, professor of clinical medicine, University and Bellevue Hospital Medical College, New York, gave the address. The Skinner medal was awarded to Capt. Joseph I. Martin, U. S. Army, Medical Corps, he having attained the highest general average. Following the exercises, there was a review of the troops in honor of the Surgeon General and the visiting officers, and following this, a reception was tendered General and Mrs. Ireland and Colonel and Mrs. Brooks at the home of Colonel Reynolds.

Captured Whisky for Patients

The Surgeon General of the army has accepted a proposal made by the federal prohibition agent at Tampa, Fla., to turn over to the medical department of the army forty barrels of whisky which have been captured off the Florida coast. The state prohibition officer states that five years ago forty barrels of whisky, made in this country prior to the passage of the prohibition law but shipped out of the country when the law went into effect, were captured off the coast of Florida when an attempt was made, illegally, to return it to the United States. The federal court issued an order that the whisky be confiscated. The prohibition agent, however, secured a modification of the order for the purpose of having this supply turned over to hospitals of the army and navy. The liquor is at present stored at Key West, Fla.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 5, 1926.

Protection Against Lead Paint Poisoning

A bill to make better provision for the protection against lead poisoning of persons employed in painting buildings is to be introduced by the government. It provides that the secretary of state may make regulations for preventing danger from the use of lead paint to persons employed in or in connection with the painting of buildings, and in particular for prohibiting the use of any lead compound except in the form of paste or of paint ready for use; for the prevention of danger arising from the application of lead paint in the form of spray; for the prevention so far as practicable of danger arising from dust caused by dry rubbing down and scraping; for providing for the medical examination of persons employed in or in connection with painting with lead paint, and for the suspension from such employment of persons whose health is or appears likely to be injuriously affected thereby; for securing facilities for washing during and on cessation of work to persons employed in painting; for the use of protective clothing by persons so employed; for preventing clothes left off during work from being soiled by paint, and for the distribution to persons so employed of instructions with regard to hygienic precautions to be taken. The bill prohibits the employment of any woman or young person in painting any part of a building with lead paint. But this does not apply to the employment of persons employed as apprentices in the painting trade under arrangements approved by an order of the secretary of state made after consultation with the organizations, if any, representative of the employers and workers in the trade; or women or young persons in such special decorative or other work (not being work of an industrial character) as may be excluded from the provisions of this section by an order of the secretary of state.

Proposed Register of Opticians

A deputation from the British Medical Association waited on the parliamentary medical committee at the House of Commons on the subject of the opticians bill. The object of the measure is to provide for the creation of a register of qualified opticians, and ultimately to prevent any nonregistered person from practicing as an optician. The bill is promoted by the four existing opticians' societies. Mr. N. Bishop-Harman, Mr. H. L. Eason, and other oculists attended to state the case for the British Medical Association against the bill. It was contended that the matter had assumed greater importance since the royal commission on health insurance had suggested that treatment of the eyes should be among the additional benefits to be granted. This would mean that ultimately there would have to be an oculist or optician in every town. The deputation urged that no cause had been shown for setting up another close corporation; that even if opticians charged smaller fees they could derive large recurring profits from supplying glasses, and that in the testing of the eyes a mistake due to lack of skilled knowledge might result in grave danger to the patient. It was mentioned that there are now 700 competent ophthalmic surgeons, that the number of men pursuing the special course is increasing, and that they will number 2,000 or 3,000 in a few years' time.

Strikers and Medical Students

The main cause of the early collapse of the general strike was the number and efficiency of the volunteers who carried on the essential services of the country. Among these, college students, including medical students, were prominent. The resentment aroused is shown by a letter from the secretary of the strike committee of the Transport and General Workers Union to the governors of Guy's Hospital, protesting against what he is pleased to call "blacklegging" by the students. The opprobrious term "blackleg" serves for argument and is applied indiscriminately to those who take the place of strikers, no matter how much the latter are in the wrong. The letter runs: "Our people have very long memories and will abstain from assisting the hospital when you are appealing for funds. My committee quite appreciate the fact that from the students' point of view it was only a 'rag' but would strongly point out it is a matter of bread and butter to us." Mr. H. L. Eason, superintendent of the hospital, replying on behalf of the governors, wrote: "During the strike the hospital remained open day and night, with its full service in every department, for the treatment of any person, striker or nonstriker, unionist or nonunionist, who might require assistance. No qualified medical officers, and no students whose services were required for the ordinary work of the hospital, were withdrawn from duty. You are probably not aware, that, in a large medical school attached to a hospital such as Guy's, there are a large number of students who are not required or employed for the actual work of the hospital. These students are free agents, and are not under the control of the hospital as regards their private or public actions. A number of them, no doubt, in common with the rest of the population, responded to the government's appeal to assist in carrying on those services which are essential to the community during a general strike, and for their work in this connection they have earned the gratitude of the public at large." The superintendent added that, even if the members of the union decided to withdraw their support, the hospital would continue, as in the past, to treat without any distinction all persons, whatever their political views, should they or their dependents require the services of the hospital. Of course it is both a false and a perfectly gratuitous assumption to say that the students undertook to help in the maintenance of the essential services of the country in any spirit of "rag"; they did it, like other good citizens, from a sense of duty, and thereby neglected for a time their studies. It is also rather strange that strikers who are engaged in cutting off the "bread and butter" of the whole population should complain about theirs being affected by the action of the students. Equally ridiculous is the threat to cut off subscriptions from a great hospital which provides free medical treatment mainly for the class to which they belong. But the widespread display of resentment against the various voluntary organizations that rescued the country from chaos and tyranny should prepare one for any absurdity. Forsooth, the unions have a perfect right to combine and elaborately prepare and launch an attack threatening the country with starvation, but the people so threatened have no right to combine to prevent this catastrophe. "This is a very wicked animal; when attacked, he defends himself," said a witty Frenchman, but our strikers do not seem to see the point.

Stephen Paget, F.R.C.S.

Mr. Stephen Paget, who practiced for some years as a surgeon but whose claim to distinction is mainly literary, has died at an advanced age. Born in 1855, the fourth son of Sir James Paget, he was educated at Christ Church, Oxford, where he took classical honors, and at St. Bartholomew's Hospital. He was appointed surgeon to the Metropolitan Hospital and later to the West London, and finally aural surgeon to the Middlesex Hospital. In 1910 he retired from practice and devoted himself entirely to literary work and to the defense of scientific investigation against the antivivisectionists and other cranks. In 1901 he first established his reputation as a writer by the publication of "Memoirs and Letters of Sir James Paget," a truthful and discriminating biography of his father, still much quoted. In the following year he edited his father's Selected Essays and Addresses. In 1919 he published a biography of Sir Victor Horsley, in which he dealt fairly with a difficult character, doing full justice to his great scientific achievements, but not allowing himself to be harnessed to the eccentricities of that polemical personality. In 1897 he contributed to a series of biographies, then being issued, a life of John Hunter, and in the same year an independent volume on Ambroise Paré and His Times. The most successful of his other books was "The Young People"; others were Confessio Medici (a book found helpful and much appreciated by members of the medical profession), "Essays for Boys and Girls," "I Sometimes Think," and "I Have Reason to Believe." He was master of a charming and natural literary style, which was inherited from his great father. In 1908 he founded with the help of other distinguished men (Professor Cushny, Sir Victor Horsley, Dr. Beevor, Dr. Head and Dr. Leonard Hill) the Research Defense Society, of which he was appointed honorary secretary. The energy which he devoted to this society was enormous: he became the protagonist in this country in the battle against the antivivisectionists. He wrote a host of pamphlets, lectured, debated, organized meetings and edited the journal, *The Fight Against Disease.* He spared no pains in confuting the calumnies and fallacies of the antivivisectionists, because of the hindrance they might be to the progress of science. His books dealing with this subject are most valuable. Even early in his career his interest was shown by his "Experiments on Animals," of which a third edition appeared in 1906. In 1912 he published "For and Against Experiments on Animals," and in 1914, "Pasteur and After Pasteur."

JAPAN

(From Our Regular Correspondent)

May 15, 1926.

Blind Men's Physical Development

Drs. Kiichiro Hasumi and Tadao Mori have published the results of their researches concerning the general physical consequences of loss of sight in students from 13 to 26 years of age. The blind students are generally below par physically. This poor state of physical development is mostly due to their lack of bodily exercise, but hereditary syphilis seems also to play an important part. Individual constitution, furthermore, may be the primary cause. A good number of those examined showed scoliosis. The loss of sight of the greater number is due to gonorrhea or syphilis, while in only a few does it seem to be due to nutritional trouble. A good many of them have Hutchinson's teeth, alveolar suppuration and caries. Many have respiratory disease.

Representative to the International Hygienic Conference

The ministries of home and education appointed Dr. Itsuma Takagi, medical expert of the government laboratory for the investigation of infectious diseases, as a Japanese representative to the international conference held in the Netherlands at the end of April.

Minimum Nourishment

Dr. Takahira and his assistant have discovered that minimum required nourishment varies: the harder the man's usual labor is, the more nourishment he requires; for instance, the metropolitan police naturally require more nourishment than the motormen and conductors of the street cars in Tokyo, who in turn require more than teachers of the primary schools in Tokyo. Casual laborers require more nourishment than people of any other class. In calculating the calories required by a man, the surface area of his body is the most important element. Accordingly, a gaunt, tall person requires more calories than a fat but short person. A simple method of measuring the surface area of a man's body, therefore, has become necessary.

The following exact formulas for measuring the surface area of a body have been published by Dr. Takahira and his assistants:

$$\text{Formula 1.}\quad A = W^{0.425} \times H^{0.725} \times 42.46$$
$$\text{Formula 2.}\quad A = W^{0.427} \times H^{0.718} \times 74.49$$

A = surface area of body in square centimeters.
W = body weight in kilograms.
H = height of body in centimeters.

Health Insurance

The health insurance laws, which were published in March, 1922, but which have not taken effect owing to the earthquake disaster of Tokyo, are to be put into force next July. According to the laws, the government or any health insurance association will issue to laborers compulsory or voluntary insurance against accidents, disease, death or childbirth. In case of accident or disease, physicians' fees and bills for medicines for 180 days will be paid by the insurers, and the insured will be allowed 60 per cent of their wages in order that they may pay living expenses while they are unable to work. They may call on any physician, dentist, specialist or pharmacist of those appointed by their insurers. In case of childbirth, the insured shall be paid the expenses of delivery and of a maternity hospital or a midwife, and shall be allowed in addition 60 per cent of their wages for twenty-eight days before the delivery and for forty-two days after it. In case of death, the policyholder shall be paid only the burial expenses, though an amount equal to the insured's wages for twenty days may be allowed.

Kato's Departure for the International Physiology Congress

Prof. Dr. Genichi Kato of the medical college of the Keio University, who is celebrated for his theory of decrementless conduction, left Tokyo for Europe, May 8, accompanied by four other professors in the same college, to make an experimental report on his new theory at the International Physiology Congress to be held in Stockholm next August.

Tuberculosis Patients in Korea

The government of Korea made an investigation of tuberculosis in Korea last year following the statistics that there were 11,939 cases, with 4,040 deaths. The greatest number of the patients were from 30 to 40 years old. Next in order were 695 young patients, aged 20 or so, and among them were 1,811 farmers, 810 merchants, and 523 patients without occupation. The incidence of tuberculosis was lower among fishermen than in any other industrial class.

Impotence of Workmen

Dr. Shogo Koinuma, medical expert of the home department, made an investigation of health conditions of 637 families of workmen in big storage battery factories in Osaka, Kyoto and Yokosuka, and in some big potteries. The statistics concerning 298 families of storage battery employees show the effect of lead intoxication on generative capacity:

Effects	Families	Percentage
170 workmen engaging in lead work:		
Sterility	42	24.7
Premature or stillbirth and miscarriage	26	8.2
Death of nurslings	70	24.2
128 workmen not engaging in lead work:		
Sterility	20	14.8
Premature or stillbirth and miscarriage	10	2.8
Death of nurslings	66	19.2

Infant Mortality

The statistics bureau of the Tokyo municipal office made an investigation in three wards of the city concerning the families of nurslings that died during the year May, 1924, to April, 1925. The Koishikawa ward is a healthful quarter of the capital that suffered least from the earthquake of 1923, while Honjo is an unhealthful quarter, on the river Sumida and Tokyo Bay, where the earthquake disaster was most severe and most of the laborers and workmen still live in barracks; nearly half of Shitaya suffered the disaster, but is now in course of reconstruction. The statistics show an inseparable relation between the death rate of nurslings and their parents' dwellings.

KOISHIKAWA Number of Rooms	KOISHIKAWA Number of Dead	HONJO Number of Rooms	HONJO Number of Dead
5 and more than 5	183	5 and more than 5	69
4	96	4	10
3	135	3	65
2	200	2	249
1	0	1	413

The main causes of their death are as follows:

Causes of Death	Number of Dead
Congenital abnormality, weak constitution and other diseases peculiar to nurslings	578
Pneumonia and bronchitis	474
Diarrhea and enteritis	432
Measles	82
Whooping cough	71
Bronchopneumonia	55
External troubles	39
Diseases of respiratory organs	29
Diseases of heart	25
Infectious or local diseases	20
Influenza	17
Other causes	337

BELGIUM

(From Our Regular Correspondent)

May 20, 1926.

Milk Legislation

The *Moniteur belge* contains an article giving an account of recent legislation pertaining to the production, transportation and sale of milk. To prevent adulteration or fraud, milk may be sold only in containers bearing labels indicating its quality: "whole milk," "skim milk," etc. Milk may not be offered for human consumption if produced by cows that are being treated with drugs that may affect the milk, if the flanks and udders of the animals are habitually covered with dung or if the cows have infectious diseases of the udders. Containers must not be of red or yellow copper, of wood, or of unglazed terra cotta ware. They must not be rusty or have a corrugated surface, nor may their walls be foul-smelling, or contaminated by milk settlings or other material. All containers must be kept in a perfect state of cleanliness by the use of hot water, steam or an alkaline solution applied daily. Milk bottles must be of uncolored, smooth glass, cylindric, with a flat bottom, wide opening and no projecting rim or shoulder. Before each refilling they must be cleansed and disinfected, by being dipped for at least ten minutes in a hot 5 per cent alkaline solution, cleaned with the aid of gravel, metal pellets or a brush, rinsed in clear water and allowed to drain. All deposits of organic matter must be removed. Siphons must be provided with a mechanical priming system. Paper containers must not be used more than once. Milk which comes from barns in which cows affected with contagious or infectious disease are kept may not be offered for human consumption. However, milk from barns in which are kept cows affected with tuberculosis (except tuberculosis of the udder) or foot-and-mouth disease may be offered for sale after having been pasteurized in the manner prescribed by the minister of health. Milk that has undergone changes through the action of micro-organisms or infectious products is prohibited (this includes acid milk that curdles on boiling; also viscous, putrid, bitter, blue or red milk). Milk may not contain preservatives, neutralizing substances, coloring matter or thickening substances. Excluded also is milk contaminated by impurities, such as particles of fodder or excrementa, hairs, flies, or settlings of organic matter, and which yields, after standing four hours or less, sediment equal to 0.5 cc. of impurities to a pink of milk, or which contains in a quart of milk more than 12 mg. of impurities insoluble in water, alcohol or ether, unless it can be shown by a fermentation test or by a bacteriologic analysis that microbes of putrefaction are absent.

CANNED MILK

Also the regulations governing the production and sale of canned milk have been published. Containers must bear labels indicating the nature of the product, such as "condensed whole milk," "sweetened condensed whole milk," "condensed skim milk" "or sweetened condensed skim milk." The label must also give the contents expressed in grams, and the name and address of the manufacturer or dealer. Milk in a state of fermentation, or containing antiseptics or coloring matter is prohibited.

Smallpox Vaccination

The Société de salubrité et d'hygiène publique of the province of Liége has called the attention of the people and of the public authorities to the efficacy of vaccination against smallpox and has pointed out the need of revaccination. It has expressed regret that vaccination certificates are not more rigorously demanded of children of school age.

Roentgenologic Examination of the Pericardium

Mr. Castex has presented to the Royal Academy of Medicine a communication on the use of lipiodol in the roentgenologic examination of the pericardium. He has employed it in cases of hemorrhagic tuberculous pericarditis, and it would seem that the method is destined to be widely used, owing to its value not only for diagnosis but also as treatment.

The Wassermann Test in Relation to Leprosy

Of twenty-four lepers examined by Dr. Van Den Branden, the Wassermann test was negative in fourteen, positive in five, and anticomplementary in one. The Wassermann test, which was positive in the four remaining cases, became negative in three after antisyphilitic treatment and remained only slightly positive in the fourth. These experiments show that the Wassermann test is generally negative in leprosy, the positive reactions appearing to be due to association with syphilis.

The Trypanosomiasis Expedition

Dr. Fourche has published a report on the trypanosomiasis expedition which was sent out by the Société forestière et minière du Congo, which spent from May, 1923, to May, 1925, in the company's territory. Dr. Fourche's report is an amplification of that of Dr. Schwetz, communicated in a previous letter. All the natives living in the concessions of the company have been examined and treated twice. The mission did not take charge of the workmen of the company until July, 1924, and they have received but the one treatment. At the first examination, about 30,000 natives were reviewed and examined. On the first revision, 40,000 persons, in addition to 20,000 workmen, were reviewed and examined, which included the natives of 750 villages and the workmen in camps. At the time of the first examination, 581 natives affected with trypanosomiasis received a complete course of treatment, and the author treated at least as many more suspects. Sterilization was accomplished in from 35 to 72 per cent, varying with the district, or 55 per cent, on the average. During the first revision, 960 natives affected (new and old cases, whether cured or not) were treated, and an equal number of suspects. During the last nine months, 400 affected workmen and an equal number of suspects were treated. The author holds the view that the number of persons affected ranges between 2 and 10 per cent in the various districts, the average for the whole territory on the left bank of of the Kasaï being 5 per cent.

The disease is still spreading but not rapidly—less rapidly in the East than in the West. Most of the physical difficulties that at first impeded progress have been overcome. The maps of the native territory and the surveys that have been made and are being kept up make it possible to control a population which, during the last two years, has become better disciplined and more confident. Dr. Fourche does not think that the sterilization of the whole population can be accomplished in a brief space of time, but the results secured thus far are very encouraging.

BUCHAREST

(From Our Regular Correspondent)

May 20, 1926.

Experiments with Disinfectants

Some experiments on disinfectants carried out by the Institute for the Teaching of Public Hygiene in Cluj have reference to conditions of use in dwellings. Fluid disinfectants used were phenol (carbolic acid), calcium hypochlorite, mercuric chloride and sodium permanganate, while formaldehyde and sulphurous acid were the gaseous disinfectants tried. The organisms of typhoid, diphtheria, cholera and tuberculosis were selected, and were placed in solutions of broth, milk or melted gelatin as well as on cloth, unvarnished or unpainted wood, linen and wall paper. Formaldehyde vapor seemed superior to sulphurous acid in the case of tuberculous sputum, dried on linen or paper. Mercuric chloride, 1:1,000, destroyed all microbes; phenol, 5 per cent solution, all but anthrax spores. The length of exposure was twenty-four hours in each case. Calcium hypochlorite destroyed only the less resistant microbes, though it proved highly successful with anthrax spores on linen and paper. It was concluded that for highly resistant organisms, such as anthrax spores, mercuric chloride alone is absolutely certain; for tubercle bacilli, both mercuric chloride and phenol are efficacious; sodium permanganate and calcium hypochlorite are practically useless even in the case of slightly resistant organisms, in connection with which the other disinfectants, e. g., formaldehyde, sulphurous acid, mercuric chloride and phenol are fairly satisfactory. Evidence is accumulating to show that disinfection by spraying is the most trustworthy, and is most economical of time and expense.

The Prophylaxis of Malaria

Expeditions sent from Belgrade and Bucharest to some parts of Montenegro and Albania have dealt with the prevention of malaria. The commission recommends, as prophylactic agents, well built houses, freely ventilated and drained, and guarded by mosquito netting. Persons going out at night should have their heads, arms and feet properly protected from mosquitoes. The most efficient prophylaxis is large doses of quinine. The commission found the best results with 0.3 to 0.5 Gm. of quinine every four or five days. It considers permanent protection impossible by this means, and evolved a plan of prophylaxis based on the immunity acquired by some natives, owing to their having acquired the infection in childhood. The commission argues that quinine prevents the body becoming immune, because the malarial organisms are killed before the body has acquired the resistance necessary to complete immunity. It therefore gives sufficient quinine to prevent serious manifestations of the disease, but not sufficient to kill all the organisms in the blood. Thus, after a considerable time they bring about a permanent immunity.

The Climatic Treatment of Pulmonary Tuberculosis

Dr. Negulescu, chief physician of a leading climatic resort, does not believe that a high altitude is beneficial in pulmonary tuberculosis, because it expands the lungs. He states that shallow breathing is beneficial for a tuberculous patient, and that no breathing would be better still, on the ground that it is a good rule to put a sick organ at rest. Other Roumanian climatologists say that in acute tuberculous disease Dr. Negulescu's assertion may hold good, but that they cannot agree with him in regard to chronic cases.

Compulsory Notification of Pulmonary Tuberculosis

Dr. Catuneanu reported before the Bucharest Medical Society that voluntary notification of pulmonary tuberculosis has been unsatisfactory. In prevention work, early notification is necessary. The time appears ripe for compulsory notification of pulmonary tuberculosis, and the Bucharest city health board has recently decided to make the experiment. To date compulsory notification in certain central European cities has proved successful.

Unqualified Person as Director of a Veterinary Sanatorium

Recently a company was registered in Bucharest as the "Veterinary Sanatorium Limited" and was under the direction of a nonregistered veterinary surgeon, who described himself as "M.D., U. S. A., Specialist, Managing Director." An injunction was applied for by the Association of Roumanian Veterinary Surgeons through the public prosecutor, and was granted. It was held that, although the limited company was not a person, within the meaning of the competent act, the title used, viz., "M.D., U. S. A., Specialist, Managing Director of the Veterinary Sanatorium Limited," led to the inference that the director was a practitioner of veterinary surgery, contrary to the provisions of the act, and that, consequently, an injunction must be granted, restraining both the company and the managing director from using any description of such director indicating that he was a veterinary surgeon or a practitioner of veterinary surgery or any branch thereof.

BERLIN

(From Our Regular Correspondent)

May 8, 1926.

The German Surgical Society

The celebration of the fiftieth anniversary of the founding of the Deutsche Gesellschaft für Chirurgie, under the chairmanship of Körte, was a pronounced success. In honor of the occasion, the *Deutsche medizinische Wochenschrift* issued a memorial edition containing twenty-eight articles by eminent surgeons of various countries, six of the articles being written by Americans. The *Zentralblatt für Chirurgie* also issued a special number.

Bircher of Aarau, Switzerland, presented in the name of the Schweizer Gesellschaft für Chirurgie a bronze statue of von Haller. Bauer of Stockholm read a treatise in Latin issued by the Swedish surgical society.

Von Eiselsberg of Vienna delivered the opening address on "Problems of Surgery of the Brain and Spinal Cord." The researches of Fritsch, Hitzig and others laid the foundation for this branch of surgery. In Bergmann's time surgeons scarcely ventured to operate on the anterior central gyrus. Today surgeons no longer hesitate to operate on any part of the brain, with the exception of the pons and the medulla oblongata. The main thing is a prompt and correct diagnosis, for which an intimate collaboration of neurologist and surgeon is essential. Encephalography has not contributed what was expected of it. It has, however, considerable value for the differentiation of hydrocephalus and brain tumors. Von Eiselsberg does not employ it for localization purposes, but prefers, if necessary, an exploratory exposure of the brain. Tumors of the region of the auditory nerve, which, as recent researches show, are for the most part benign neurinomas, do not need to be radically eliminated. This finding makes for a better prognosis, since they can be favorably influenced by postoperative roentgenization. In fact, in general, roentgenray treatment of brain tumors has a good effect. The injection of lipiodol by way of the suboccipital cisterna is of great importance for the recognition of tumors of the spinal cord. In eighty-nine tumors, eighty-four operative cures were effected. Also the remote results were good. Inoperable tumors should be treated with roentgen rays, whereby good effects, and in some instances cures extending over a period of two and a half years, may be secured. Early diagnosis together with observation of every case of obstinate headache, and early operation when indicated, are the principal aims to be achieved.

Fedor Krause of Berlin spoke on the operative treatment of epilepsy. The treatment of jacksonian epilepsy is based on the recognition of the focus which gives rise to the attack and on its operative removal. This requires a most exact observation of attacks. It often appears as if the convulsion began in one of the extremities, but it is preceded by an ocular manifestation or a turning of the head, which may last only a few seconds and therefore easily escapes observation. In such cases, one would be wrong in attacking the motor center of the extremity concerned. In other cases, the attack is preceded by an aura of visual, auditory or olfactory hallucinations. In contradistinction to jacksonian epilepsy, he does not regard true epilepsy as ordinarily amenable to surgical treatment. Only when the attacks begin with typical local symptoms is surgical intervention indicated. Even in jacksonian epilepsy, intervention must be early.

Guleke of Jena dealt with the clinical aspects of neurinomas, of which he distinguished three groups. To the first group belong neurinomas found in various parts of the brain and which are exemplified by tumors of the auditory nerve. Second, tumors found along the vertebral canal usually originate in the posterior roots and may develop along the transverse processes. The third group occurs along the peripheral nerves (sciatic, peroneal). Two thirds of the neurinomas were found at the points of exit of the nerves. The neurinoma is hard to distinguish from the neurofibroma and the sarcoma.

The second address was given by E. Rehn of Düsseldorf on "Surgery and Organic Function." Organic function is life itself; disease is a complex of functional disturbances. The speaker mentioned a new type of patient that is endangered by operation; namely, the so-called embolic, who is represented as pale of skin, corpulent, and unable to cope with severe mental and physical exertion. A comparison of the blood coagulation curves shows a markedly increased coagulability. Further dangers lie in endocrine disturbances. Soma and psyche cannot be separated. The surgeon must be able to influence also the psyche. The vagotonic patient is a poor surgical risk. He is more likely to suffer from shock, and local anesthesia should be avoided in his case because of the danger from drop in blood pressure. The disturbances can be prevented by the use of calcium chloride urea. Anesthesia may cause severe disturbances in the liver and bile ducts, especially in patients with chronic liver affections. The speaker emphasized that infusions of sodium chloride and dextrose are not always indicated. Blood transfusions are better. In preoperative examination of the heart the Kaufmann functional test is appropriate, or the patient may be required to inflate ten times a pneumatic ring. Prophylactic administration of digitalis is recommended in selected cases. Calcium chloride urea may be injected as a prophylactic in pulmonary affections. Both kidney and liver function should be tested. Thus, the surgeon must occupy himself more and more with physiology. Every organ is a part of the whole organism. Wounds heal better on an acid than on an alkaline diet, although care must be taken to preserve a certain alkali reserve in the body.

Haberer of Graz spoke on the sparing of tissue in operations. Loss of blood and bruising of the tissues must be avoided. If the tissues are spared, scar tumors, adhesions and thrombi are less frequent and the danger of embolism is lessened. He thinks that some of the postoperative lung complications are due to small emboli.

Kirschner of Königsberg discussed the treatment of suppurative generalized peritonitis. His statements were based partly on cases occurring in the Königsberg clinic and partly on 10,000 further cases in twenty-three clinics and hospitals. The statistics reveal a high mortality in early childhood up to age 5, a decrease up to age 15, and then a gradual increase from the fifth decade on. The mortality increases from 24.9 per cent in the first twelve hours to 32.4 per cent in the second twelve hours, 45.5 per cent when the operation is performed the second day, and 66.6 per cent when the operation is delayed beyond forty-eight hours. For eliminating the exudate found in the abdominal cavity, Kirschner recommends irrigation with physiologic sodium chloride solution if the exudate is rather evenly distributed over the abdominal space and collections of filth are visible; if the material to be removed is distributed over a small area, "dry mopping" is indicated. He is opposed to the introduction of medicaments into the abdominal cavity. If every focus of infection can be effectively eliminated, the wound should be closed without drainage. If that is not possible, then only the circumscribed focus of infection should be drained. Gauze may be used to wall off the focus of infection from the remaining abdominal cavity. Drainage of Douglas' pouch, and the Rehn-Fowler position, Kirschner regards as useless. It is of greater importance that the patient assume a comfortable horizontal position. Camphor preparations have not proved as valuable as digitalis, epinephrine and, above all, morphine. The ingestion of fluids should be so regulated by the rectal and intravenous drip methods that the amount of urine voided daily be from 1 to 1.5 liters. Some intestinal activity is needed to remove toxins that may have collected in the intestine. Furthermore, it serves, as Usadel of Königsberg has shown by experiments, to stimulate blood flow in the portal circulation, in which in peritonitis and intestinal paralysis stagnation often occurs. When intestinal paralysis has persisted, Kirschner has seen improvement result in very severe cases from enterostomy and multiple percutaneous punctures of the intestine. As a result of the following out of these principles, the mortality of the Königsberger clinic has been reduced from 87.5 per cent to 30.1 over a period of thirty years. Early operation and improvements in technic have contributed to this satisfactory result.

Mention of the numerous individual papers must be omitted for lack of space.

Marriages

John Calvin Cox, Maplewood, N. J., to Miss Florence Becker of Hilton, April 23.

Edward Vincent Milholland to Miss Rose Marie Barry, both of Baltimore, June 2.

Walter D. Hammond, Minneapolis, to Miss Esther Mae Huff of Seattle, May 19.

Deaths

Franklin Emmett Wallace ⊕ Pueblo, Colo.; Rush Medical College, Chicago, 1896; member of the American Academy of Ophthalmology and Oto-Laryngology, the Colorado Ophthalmological Society and the Colorado Oto-Laryngological Society; Spanish-American War veteran; formerly city physician of Monmouth, Ill., and coroner of Warren County, Ill.; aged 58; died, May 23.

Edward Parks Hall ⊕ Kansas City, Mo.; Ensworth Medical College, St. Joseph, 1897; member of the American Academy of Ophthalmology; professor of otorhinolaryngology, University of Kansas School of Medicine, Rosedale; served during the World War; aged 49; died in May, of chronic myocarditis and mitral insufficiency.

William R. Brooksher ⊕ Fort Smith, Ark.; Kentucky School of Medicine, Louisville, 1891; member of the Radiological Society of North America; past president and secretary of the Sebastian County Medical Society; aged 61; died, May 19, of septicemia.

Sumner Danforth Davis, Jermyn, Pa.; Medical School of Harvard University, Boston, 1869; also a druggist; for fifteen years postmaster; formerly secretary of the board of health and for thirty-two years health officer; aged 80; died, April 11.

Morris Printz ⊕ Denver; University of Colorado School of Medicine, Denver, 1918; aged 31; died in April, of septic sore throat and acute lymphatic leukemia, while attending the annual session of the American Medical Association.

Haughton Baxley, Markham, Va.; College of Physicians and Surgeons, Baltimore, 1889; one of the founders of the Maryland Medical College and the Franklin Square Hospital, Baltimore; aged 58; died, May 28, of pneumonia.

David Jasper Hill, Lexington, N. C.; College of Physicians and Surgeons, Baltimore, 1893; member of the Medical Society of the State of North Carolina; aged 62; died, May 13, at Winston-Salem, of angina pectoris.

Elliott Swift Riggs, Washington, Pa.; Jefferson Medical College of Philadelphia, 1869; member of the Medical Society of the State of Pennsylvania; Civil War veteran; aged 83; died, May 2, of cerebral hemorrhage.

John Columbus Hammack, Walkertown, N. C.; College of Physicians and Surgeons, Baltimore, 1895; member of the Medical Society of the State of North Carolina; aged 58; died, May 15, of myocarditis.

Charles Paul Pike, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1885; member of the Medical Society of the State of Pennsylvania; aged 72; died, May 1, of myocarditis.

William Divine Davis ⊕ St. Louis; Washington University Medical School, St. Louis, 1909; member of the St. Louis Dermatological Society; aged 38; died suddenly, May 20, of chronic myocarditis.

Richard Gilbert Ayer, Honolulu, Hawaii; Medical School of Harvard University, Boston, 1891; member of the Hawaii Territorial Medical Association; aged 58; died, March 30, of lobar pneumonia.

Charles Cross ⊕ San Francisco; Cooper Medical College, San Francisco, 1895; served during the Spanish-American and World wars; aged 62; died, March 24, of cerebral hemorrhage.

John William Elliott ⊕ Sharon, Pa.; Western Reserve University School of Medicine, Cleveland, 1889; Jefferson Medical College of Philadelphia, 1890; aged 67; died, April 19, of pneumonia.

Frank P. Peyton, Mexia, Texas; Louisville (Ky.) Medical College, 1888; member of the State Medical Association of Texas; aged 71; died, May 14, at the Brown Hospital, of pneumonia.

Edith Sara Brownsill ⊕ Berkeley, Calif.; University of California Medical School, San Francisco, 1904; on the staff of the Bates Sanitarium; aged 54; died, April 26, of heart disease.

Louis J. Herget, Louisville, Ky.; Louisville Medical College, 1894; member of the Kentucky State Medical Association; aged 54; died, May 8, of a self-inflicted bullet wound.

Gerhard Arthur Isselstein, Dayton, Ohio; Ohio State University College of Medicine, Columbus, 1925; aged 26; died, May 4, at sanatorium in Colorado Springs, of tuberculosis.

Powhatan Moncure, Bealeton, Va.; Medical College of Virginia, Richmond, 1884; member of the Medical Society of Virginia; aged 65; died, May 3, of arteriosclerosis.

James Cullen Keaney, De Soto, Mo.; Homeopathic Medical College of Missouri, St. Louis, 1874; aged 88; died, May 4, at St. Mary's Hospital, St. Louis, of lobar pneumonia.

James Crowe ⊕ Huntingdon Valley, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1904; aged 48; died, May 1, of pneumonia, following influenza.

Isaac Newton Presley, Ellettsville, Ind.; Beach Medical Institute, Indianapolis, 1885; Civil War veteran; aged 81; died, February 28, at Bridgeport, of paralysis.

Achilles Walter Cook, Wheatland, Iowa; Keokuk Medical College, 1891; aged 60; died, May 26, at the Jane Lamb Hospital, Clinton, of carcinoma of the throat.

William G. W. Tupper, Minneapolis; University of Michigan Medical School, Ann Arbor, 1884; aged 65; died, May 8, at the Eitel Hospital, of coronary sclerosis.

William J. McWaters, Bragg City, Mo.; University of Tennessee College of Medicine, Memphis, 1901; aged 56; died, May 9, of carbolic acid poisoning.

John William Miller, Chinnville, Ky.; Eclectic Medical Institute, Cincinnati, 1905; aged 70; died in May, of carcinoma of the face, and arteriosclerosis.

Frederick Wilhelm Froehling ⊕ Kansas City, Mo.; University of Leipzig, Germany, 1891; aged 62; died in May, of carcinoma of the gallbladder and liver.

Alexander C. Schuman, Louisville, Ky.; University of Louisville School of Medicine, 1875; aged 85; died, May 9, of arteriosclerosis and asthma.

George C. Kingsbury ⊕ Largo, Fla.; Miami Medical College, Cincinnati, 1880; aged 67; died, May 19, of acute mastoiditis and diabetes mellitus.

Alonzo P. Baker, Herrin, Ill.; Medical College of Ohio, Cincinnati, 1875; Civil War veteran; aged 77; died, May 21, of heart disease and asthma.

Marion L. Rice Berneike, Anaheim, Calif.; University of Michigan Medical School, Ann Arbor, 1874; aged 75; died, February 3, of myocarditis.

Willis Pearl Middleton, Acton, Mass.; Tufts College Medical School, Boston, 1912; aged 36; died, April 2, of pneumonia, following influenza.

Ulric J. Lalonde, Montreal, Que., Canada; Laval University Faculty of Medicine, Quebec, 1891; aged 63; died recently, following a long illness.

Harmon Jasper Rossiter, Deertrail, Colo.; Eclectic Medical University, Kansas City, 1918; aged 44; died, May 7, of carcinoma of the stomach.

Buford Thomas Wood, Danville, Ky.; University of Louisville School of Medicine, 1873; aged 76; died, May 14, of cerebral hemorrhage.

George B. Buckingham, Brookville, Ind.; Kentucky School of Medicine, Louisville, 1879; aged 74; died suddenly, May 15, of heart disease.

Ralph B. Crawford, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1882; aged 85; died, April 11, of myocarditis.

Stephen Goodhue Bailey, Lowell, Mass.; Boston University School of Medicine, 1880; aged 81; died, March 31, of carcinoma.

Nathan Edward McAlister, Portland, Ore.; University Medical College of Kansas City, Mo., 1897; aged 57; died, March 31.

Laban Hazeltine, Jamestown, N. Y.; College of Physicians and Surgeons, Baltimore, 1880; aged 73; died, May 10, of uremia.

Harrison D. Cooper, Dexter, Kan. (licensed, Kansas, 1901); aged 68; died, March 15, of cerebral hemorrhage.

Franklin Pierce Amdor, Sand Springs, Mont. (licensed, Iowa, 1887); aged 76; died, March 28.

Carl Wintrich, Chicago (licensed, Ohio, 1896); aged 79; died, April 30, of chronic myocarditis.

L. D. Coffman, Poetry, Texas (licensed, Texas, under the Act of 1907); aged 59; died, March 21.

Thomas F. Clark, Belpre, Kan. (licensed, Kansas, 1901); aged 83; died, March 4, of paralysis.

E. P. Davenport, Craigville, Ind. (licensed, Indiana, 1897); died recently, of paralysis.

J. W. Miller, Morrisville, Mo. (licensed, Missouri, 1883); aged 85; died, April 21.

The Propaganda for Reform

In This Department Appear Reports of The Journal's Bureau of Investigation, of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other General Material of an Informative Nature

L. M. HUNTER'S EPILEPSY CURE

Mail-Order Quackery in Little Rock, Arkansas

LaFayette M. Hunter, M.D., Little Rock, Arkansas, conducts a crude piece of mail-order quackery under the trade name "The Dr. Hunter Laboratories," selling a mail-order "cure" for epilepsy. Some months ago the stationery of "The Dr. Hunter Laboratories" declared that its "secretary" was one H. S. Brevoort, M.D. What are the professional histories of these professional gentlemen?

HUNTER'S RECORD

According to our records, LaFayette M. Hunter was born in Kansas in 1888, and received a diploma from the Eclectic Medical University of Kansas City, Missouri, in 1913. This institution, which went out of existence in 1918, was a low-grade affair that was not recognized even by the state in which it operated: in fact, forty of the forty-eight states in the union refused to recognize its diplomas. At the time that Hunter obtained his diploma the Eclectic Medical University had for its secretary D. R. Alexander, whose later institution, the notorious Kansas City College of Medicine and Surgery, was so deeply involved in the nation-wide medical diploma-mill scandal of 1924-1925. The same year that Hunter received his diploma (1913) he also obtained a license in Arkansas through the Eclectic Board—probably the easiest way to obtain a license to practice medicine in the United States

In 1916 L. M. Hunter and H. S. Brevoort were operating a quack advertising office at Pittsburg, Kansas. According to the Police Department of Pittsburg, Kansas, Hunter while there was arrested at least twice for running a house of prostitution and on both occasions he forfeited his bonds and was found guilty and fined. Hunter left Pittsburg early in 1917 and word was next received that he was in Dodge City, Kansas, connected with the "United Doctors" quackery. In 1919 Hunter was at Coffeyville, Kansas, where he conducted "The Dr. Hunter's Institute of Healing," part of whose advertising material was a four-page sheet, *Health Talk*, edited by H. S. Brevoort. In 1921 Hunter was conducting an advertising office that he called "The Hunter Clinic," from Little Rock.

It is worth noting at this point that, although Hunter apparently practiced medicine for many years in Kansas, he never, so far as our records show, was legally licensed to practice medicine in that state. He had no difficulty, apparently, in getting an Eclectic license to practice in Arkansas—a state that is notorious for the ease in which owners of diplomas from diploma mills can obtain licenses through its Eclectic Board. The mail-order epilepsy cure now being conducted under the trade name The Dr. Hunter Laboratories seems to be an outgrowth of Hunter's so-called clinic.

BREVOORT'S RECORD

The professional record of H. S. Brevoort is about as unsavory as that of Hunter. Brevoort, according to our records, received a diploma in 1893 from the Medical Department of Omaha University. In 1896 he was reported to be at Arapahoe, Nebraska; about a year later in Scott, Kansas, and then at DuBois, Nebraska. He is said to have had to leave DuBois "between days" under circumstances that at this time it is not necessary to detail.

Some time later he practiced medicine and operated a drug store in Reeds Spring, Missouri, going from there to St. Joseph, Missouri, where, in 1913, he was in charge of the "United Doctors" quackery at that place. For three or four years he was at Hutchinson, Kansas, later going to Coffeyville, Kansas, where, as has already been stated, he was connected with Hunter. In 1923 he had gravitated to Arkansas.

Although Brevoort's name appeared for some time on the stationery of the Hunter Laboratories, the man, so far as our records show, has never been licensed to practice medicine in Arkansas. He has not even a license from the Eclectic Board of that state. Brevoort's name no longer appears as "secretary" of the Hunter mail-order quackery. His name is now used by Hunter in connection with the "come-on" literature. Hunter reproduces a letter in which Brevoort states that, as a physician, he takes pleasure in recommending Hunter's treatment. Brevoort now, it seems, is at Wichita Falls, Texas. His stationery notifies the public that he has a "Practice Limited to Office Treatment of Chronic and Rectal Diseases."

ENTER L. L. MARSHALL

One other point is worth noting before discussing Hunter's nostrum and its method of exploitation. An Eastern newspaper that recently was offered some advertising of the Hunter quackery rejected the advertisement. Shortly thereafter the paper received a letter from the advertising agency that submitted the advertisement, reading in part as follows:

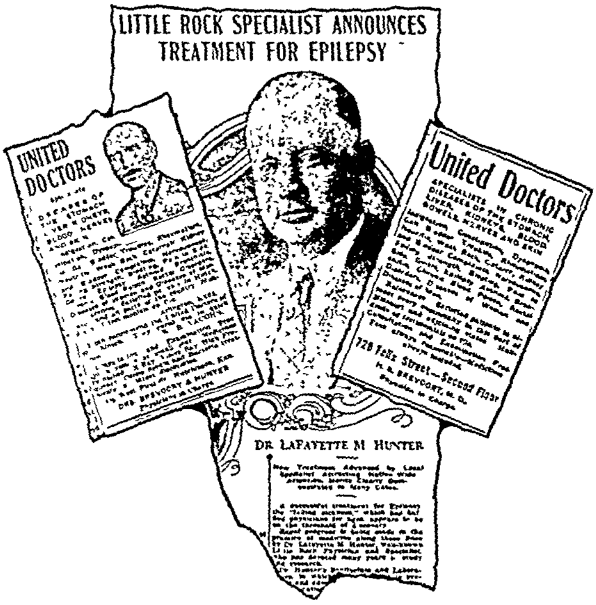
> "You have returned to us ad. of Hunter Laboratories, with notation 'Adv. not acceptable.'
>
> "However, in view of the fact that we have received a letter from Dr. L. L. Marshall of the State Board of Health of Arkansas—which we quote below—we are re-submitting the copy to you.
>
> "This is to certify that I have examined the product of the 'Dr. Hunter Laboratories' of this city, namely: 'Dr. Hunter's Rational Treatment for Epilepsy.' The Product conforms with the Pure Food & Drug Act and contains no opiates or habit forming drugs. I have also noted their advertising and it is not exaggerated. (Signed) L. L. MARSHALL, M D, Member State Board of Health."

This use of the name of the State Board of Health of Arkansas to bolster up a medical mail-order fake should be of interest to the citizens of that commonwealth. L. L. Marshall, we regret to say, is a member of the State Board of Health of Arkansas, having been appointed Jan. 1, 1925. The Marshall testimonial, as quoted by the advertising agency, in itself, indicates the professional status of the man, but that is not all. Our records show that Louis Linn Marshall was born in 1881, and got a diploma from the same wretched school that gave one to Hunter—the Eclectic Medical University of Kansas City. Marshall secured his diploma in 1912, and was immediately licensed in Arkansas—of course, by the Eclectic Board. In applying for his license in Arkansas, Marshall declared that he had attended four full courses of medical lectures, the first three years of which were alleged to have been at the Denver Homeopathic Medical College, Denver, Colorado, from September, 1903, to April, 1906. THE JOURNAL has evidence that shows that Marshall did not attend the Denver Homeopathic Medical College. The official list of matriculants of the Denver Homeopathic Medical College for some years before Marshall claims attendance until the school became extinct in 1909 fails to show Marshall's name. The person who endorsed Marshall's application for examination before the Arkansas Board, and declared him to be "a person of high moral character and worthy of professional recognition," was D. R. Alexander of Kansas City, who then was secretary of the institution that granted Marshall a diploma, and the man whose notorious Kansas City diploma-mill, during the past year or two, has made a record that smells to heaven.

When Marshall was in Kansas City and before he had even so poor a medical prop as a diploma from the Eclectic Medical University, he was connected with a concern known as the Samaritan Hospital. Kansas City papers in the spring of 1912 reported that L. L. Marshall, president and manager of the Samaritan Hospital, and one James M. Martin, alias "Dr. F. W. Lanoix," were in the county jail charged with causing the death of a woman by criminal operation. At that time D. R. Alexander was secretary of the Samaritan Hospital. Kansas city papers at that time printed a picture of Marshall bearing the legend "L. L. Marshall, one of the Samaritan Hospital Charlatans." Marshall's case never came to trial. The matter dragged along for some months and the papers reported that, after the state had spent much money in gathering evidence, the cases against Marshall (charging him with manslaughter in the second degree and practicing medicine without a license) were dismissed. Marshall's activities before he went into the medical field need not, at this time, be discussed.

THE "CURE" ITSELF

So much for the professional elements in the personnel of Hunter's mail-order epilepsy cure. The cure itself and its methods of exploitation differ not a great deal in their sordid details from those of average medical mail-order quackery Hunter emphasizes in his advertisements the falsehood that his treatment "stops seizures from the first day used." Those who answer the advertisement first receive letter no. 1 of the follow-up series. With the first letter there is the usual batch of printed testimonials—without names or addresses! There is also a six-page leaflet in which Hunter states that he has been an interested and close student of epilepsy ever since he was "in charge of the insane and epileptic department of a large charity institution." He adds that there was, until recently, no reliable remedy for epilepsy, but "now in the latter end of my long professional career" (this line of hokum was sent out by Hunter less than ten years from the time he got his diploma from the Eclectic Medical University of Kansas City) "a true specific for epilepsy has been found." If the first letter fails to bring an order, the second letter of the follow-up series comes ten days later. Letters 3, 4, 5 and 6 come at regular ten-day intervals, each being a little more insistent than its predecessor. Then comes the seventh letter, which attempts to combine all the persuasiveness of the previous six in an effort to extract the $5 necessary for one "treatment." If this fails of its object, Hunter apparently drops that name from his list for about a year, when he makes a final effort.


LITTLE ROCK SPECIALIST ANNOUNCES TREATMENT FOR EPILEPSY
UNITED DOCTORS
DRS. BREVOORT & HUNTER
United Doctors
SPECIALISTS IN CHRONIC DISEASES OF THE STOMACH, LIVER, KIDNEYS, BLOOD, BOWELS, NERVES AND SKIN
728 Fells Street—Second Floor
H. R. BREVOORT, M. D.
Physician in Charge
DR LAFAYETTE M HUNTER

Some of the older advertising of Hunter and Brevoort together with Hunter's present piece of quackery—the epilepsy cure.

In a form-letter sent out in July, 1924, Hunter says: "Fifteen years ago, when I graduated from medical college and stood on the threshold of my medical career. . . ." The facts are, as has already been stated, Hunter got his diploma in 1913, eleven years before this letter was sent out, which would indicate that he finds it difficult to stick to the truth even in chronological matters.

Five dollars was sent to the "Dr. Hunter Laboratories" for a complete "course" of "Dr. Hunter's Rational Treatment for Epilepsy." In due time the small package that was received, containing the treatment, was turned over to the A. M. A. Chemical Laboratory for analysis. The laboratory reported as follows:

LABORATORY REPORT

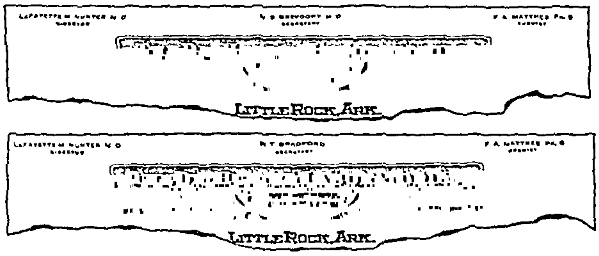
"One original package of Dr. Hunter's Rational Treatment for Epilepsy (Dr. Hunter Laboratories, Little Rock, Ark.) was submitted to the A. M. A. Chemical Laboratory for examination. The package contained fifty pink colored capsules containing a white, odorless, almost tasteless, faintly gritty powder; the average weight of the contents of each capsule was 0.27 Gm. (approximately 4.2 grains). No statement as to the composition was given on the trade package or in the accompanying circular. Qualitative tests indicated the presence of milk sugar and phenobarbital ("luminal"). Alkaloids, heavy metals, bromides, iodides, organic acids, were not found.

"Quantitative determinations yielded the following:

"Loss on drying	2.6 per cent.
"Phenobarbital	24.8 per cent.
"Lactose (milk sugar)	72.7 per cent.

"From the foregoing it may be concluded that each capsule of 'Dr. Hunter's Rational Treatment for Epilepsy' contains essentially 0.07 Gm. (approximately 1 grain) of phenobarbital (luminal), to which has been added lactose (sugar of milk)."

From the report just given it will be seen that this alleged "true specific for epilepsy," which "stops seizures from the first day used," is simply phenobarbital (luminal). The directions which come with the treatment tell the victim to take six capsules a day until a drowsiness appears, and if drowsiness fails to appear by the third day, to take eight capsules a day. He is told further that if the dosage required to produce drowsiness fails to control the seizures, another capsule should be added to the dose.


LITTLE ROCK, ARK.
LITTLE ROCK, ARK.

The letter-heads of the "Dr. Hunter Laboratories," showing that H. S. Brevoort used to be directly connected with fakery. Today Brevoort's connection is a testimonial letter puffing the Hunter nostrum.

Phenobarbital (luminal) is a powerful drug of distinctly habit-forming tendencies. Its sale in the British Isles is controlled under the Dangerous Drugs Act and it can be sold only on a physician's prescription. In this country there is no state or national control in the sale of either phenobarbital (luminal) or of the less dangerous barbital (veronal); the presence of luminal does not even have to be declared on the label under the regulations of the Food and Drugs Act, and, although it is distinctly poisonous and therefore should be debarred from the mails, as provided in the postal laws and regulations, it is being sent broadcast to any one that orders it by various mail-order quacks, of which L. M. Hunter is but one.

Phenobarbital (luminal) is more toxic than barbital (veronal). Those who have had large experience with the drug declare that it should never be prescribed in single doses of more than 1½ grains, and not more than 3 grains should be taken in twenty-four hours, because of the very slight difference that exists between the therapeutic dose and the fatal dose. Hunter tells his victims at the outset to take from six to eight grains daily. As phenobarbital frequently produces severe skin rashes, gastro-intestinal symptoms and nephritis, it should be administered only under the direct control of a physician.

In spite of these facts, well known to the medical profession, quacks like Hunter sell indiscriminately, without let or hindrance, phenobarbital in secret mixtures under proprietary names and without any hint of the fact that the stuff is phenobarbital. In addition, they charge an exorbitant price for the product. Hunter, for instance, charges $5 for 50 grains of phenobarbital in capsule form—ten cents a grain. The retail price of phenobarbital is less than one and one-half cents a grain. The financial feature, however, is of but minor importance; the serious fact is that quacks are permitted to send a dangerous drug, hidden under a proprietary name, to victims of epilepsy under the claim that it will cure this condition. That is what L. M. Hunter is doing today with the indirect aid and assistance of H. S. Brevoort, and a member of the State Board of Health of Arkansas, L. L. Marshall.

Correspondence

"SELECTING A HOSPITAL FOR INTERNSHIP"

To the Editor:—Unfortunately, some institutions have felt that, not being included in the table which accompanies my paper entitled "Selecting a Hospital for an Internship" in The Journal, May 15, indicates that they may not be acceptable for internship. The table covers only a few cities and serves merely as an example of how the percentage of necropsies may be a guide to the quality of the work of a hospital.

There are numerous hospitals in the country, not included in the table, that have a 25 per cent or greater percentage of necropsies. All such should be regarded as acceptable for an internship. Prospective interns should make inquiry of any hospital under consideration as to its number of deaths and number of necropsies per annum, among other information sought; any hospital should be willing to give this information.

Henry A. Christian, M.D., Boston.

DUODENAL TIPS

To the Editor:—In The Journal, May 22, are descriptions of two new duodenal tips. Thus, by the inventions of Carl V. Vischer and Moses Einhorn the armamentarium of the gastro-enterologist is enriched (or emburdened) by two new modifications of the instrument which seems to baffle so many minds.

Each one of these tips, as well as each of those previously devised by others, is the easiest for the physician to introduce, the least disagreeable for the patient to swallow, passes into the duodenum in the shortest possible time, and affords the best drainage by virtue of this, that or the other qualities it possesses. It is amusing to see on the very same page the same advantages claimed for one tip because of its being the largest and heaviest as yet devised, and for the other being the smallest and lightest.

Is it really the design of the duodenal tip used that determines its easy and quick passage into the duodenum? Judging from the number of duodenal tips already on the market and new ones produced every now and then, one would conclude that this is the case. In my opinion, the size, shape, weight, etc., of the tip play a very unimportant part in accomplishing a successful duodenal intubation. One who carefully follows the generally accepted rules as outlined in Dr. Moses Einhorn's communication cannot help noticing that it is not the tip that counts but a combination of many other factors, not the least being the skill with which the procedure is performed. The condition of the nervous system of the patient on any particular day, the condition of the pylorus, the amount of gagging produced in introducing the tube, the rate at which the patient swallows the tube—all these count for much more than the type of tip employed. It is common experience to have the same tube and tip pass into the duodenum with the same patient in fifteen or twenty minutes on one day and take several times that long on another. The only advantage of a large tip over a small one is that it is easier to locate it under the fluoroscope, especially when intubating a stout patient. With the average patient, it matters very little what kind of a tip one uses. The less one relies on the wonderful qualities of any particular tip, the more attention he will pay to the other details of the procedure and the better the results.

Zachary Sagal, M.D., New York.

Assistant Chief of Clinic in Gastro-Intestinal Diseases, Vanderbilt Clinic,
Columbia University.
320 West End Avenue.

DISTRIBUTION OF PHARMACEUTIC SAMPLES

To the Editor:—I desire to call your attention to the growing and pernicious custom of drug houses in mailing their literature and samples to the homes of physicians. I regret to note that some of the better pharmaceutic firms are also entering into this practice. The average daily mail contains from one to a dozen circulars, many of which are not desirable for a home library table, and certainly not elevating reading for children. Many of the samples are laxatives and douche powders containing poisons and are a menace to the home.

I simply call this matter to your attention, hoping for general disapproval and thereby securing cooperation sufficient to stop this bad method of advertising.

Charles M. Nice, M.D., Birmingham, Ala.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SARCINAE IN GASTRIC CONTENT AND IN URINE

To the Editor:—What is the pathologic significance of *Sarcina* in the stomach and urine? Is there any relationship? Could you give me references to authorities or publications where this information may be treated?

Robert F. Wilcox, M.D., LaPorte, Ind.

Answer.—*Sarcina ventriculi* is found frequently in the gastric contents in cases of long continued obstruction due to ulcer with high acidity. In these cases there is extensive fermentation, with the formation of large numbers of these organisms. They are also found in the feces in cases of obstruction due to ulcer. *Sarcina* is exceptionally found in the urine. It is smaller than the gastric sarcina, from which it is developed by transmission through the urethra. The urine being an unfavorable medium for its cultivation, the sarcina produced in it is imperfectly formed. The organisms are usually, if not always, accidentally introduced into the bladder by catheterization.

The following works may be consulted:

Munn, J. D.: Physiology and Pathology of Urine, 1908.
Finlayson: *Brit. M. J.*, 1891.
Heitzman: Urinary Diagnosis and Analysis.
Wood, F. C.: Chemical and Microscopical Diagnosis, 1905.
Todd, J. C.: Clinical Diagnosis.

TREATMENT OF BRONCHIAL ASTHMA

To the Editor:—I have a patient suffering from bronchial asthma, with excessive coughing. Epinephrine relieves her temporarily. What is the best known treatment? Can you suggest good literature on the subject?

M.D., West Virginia.

Answer.—Asthma is not a disease but a syndrome of at least two different etiologic types: (1) protein hypersensitiveness (allergy) and (2) bacterial infection. In both, a predisposing element in the nervous system must be recognized. This is partly psychic, so that an attack may come on merely because the patient expects it. Fatigue undoubtedly plays a part, so that the loss of sleep produced by attacks favors their continuation, thus establishing a vicious circle. There is also an excessive irritability of that part of the vagal nervous mechanism which controls the motor and secretory activity of the bronchi; and, the more frequently this mechanism is set into action, the more irritable it becomes. The part played by the nervous system emphasizes the importance of prompt and efficient treatment of the attack, nothing better for which has yet been advanced than the intramuscular injection of epinephrine solution, which sometimes acts satisfactorily in doses of 0.1 cc., though as much as 1 cc. may be required. It acts best and in smallest doses when used at the first warning of an attack. Hence the patient must be entrusted with its injection. Sedatives such as phenobarbital and amidopyrine, and antispasmodics like atropine or scopolamine lessen the liability to attacks, and the need for epinephrine injections.

In the allergic type of asthma, the protein to which the patient is hypersensitive must be discovered and he must be protected from it or immunized against it. In the infectious type, specific immunization by means of autogenous vaccine is likely to be of value. Anything that improves the bronchitis present in the infectious form lessens the tendency to asthmatic attacks. This is the way iodide or arsenic acts.

Modern views on the nature and treatment of asthma are presented by:

Walker, I. C., in Billings, Frank; and Forchheimer, Frederick: Therapeusis of Internal Diseases, George Blumer edition, New York, D. Appleton & Co. **4**: 10, 1924.
Brown, W. L.: *Brit. M. J.* **2**: 367 (Aug. 29) 1924.

COCKROACHES

To the Editor:—What makes water bugs and croton bugs so common in our homes and what can be done to get rid of them?

M.D., Pennsylvania.

Answer.—The wide distribution of cockroaches is brought about chiefly through maritime trading. Of the various species, the croton bug, *Blatella hermanica* Linn., and the oriental roach, *Blatta orientalis* Linn. are most widely distributed. The cockroach can be controlled in dwellings, restaurants and similar situations. One of the most important procedures for ridding premises of these pests is the careful cutting off of their food supply, such as scraps of food or ill fitting food containers. The larger forms can be trapped in a deep, smooth-walled vessel (fruit jar or the like) in which is placed a favorite roach food, such as chocolate or molasses. Sticks leading to the top of the jar enable the roaches to reach the mouth of the jar, whence they tumble into the trap in trying to reach the food. If the trap contains liquid the roaches are drowned; otherwise they must be killed by scalding, burning, oiling or otherwise.

The croton bug is more wary than the larger forms, and can crawl up the sides of a glass jar. A dark box trap with one or more tubular pasteboard entrances projecting both inside and outside is preferable. The inside mouth of the tube must be fitted with a trap door or adhesive substance around the outside of the tube to prevent the roaches from escaping. The bait may be sugar, sweet chocolate or the like. Captured roaches are shaken out into kerosene or hot water.

Borax and sodium fluoride are poisonous to these insects. Equal parts of chocolate or powdered sugar and borax, well mixed (this is important), is one form of a roach powder. This powder should be placed in little heaps, in accessible windows, or in the crevices whence the insects come.

According to Farmers' Bulletin 648, U. S. Department of Agriculture, the most effective material is 50 per cent commercial sodium fluoride mixed with some inert substance, such as powdered gypsum or flour. Marlatt recommends that such a mixture be dusted or blown over shelves, tables, floors and the runways and hiding places of roaches. The insects come out, and die in a few hours. In this way complete extermination is effected within twenty-four hours. Such repellents as eucalyptus oil, oil of citronella, oil of rosemary, and naphthalene may be used where other methods are undesirable. Fumigation with hydrocyanic acid gas, carbon bisulphide or sulphur is successful, but should not be undertaken without experience.

Further material may be found in the following:

Roaches in a Sanatorium, The Journal, Feb. 15, 1919, p. 515; March 1, 1919, p. 672.
Herus, W. B.: Medical and Veterinary Entomology, ed. 2, New York, the Macmillan Company, 1923.
Girshenfeld, Louis: Ridding the Household of Insect Pests, *Hygeia* **3**: 251 (May), 311 (June), 403 (July), 459 (Aug.), 517 (Sept.), 581 (Oct.), 642 (Nov.), 707 (Dec.) 1925.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALABAMA: Montgomery, July 13 16 Sec, Dr S W Welch, Montgomery.

ARIZONA Phoenix, July 6 Sec, Dr W. O Sweek, 404 Heard Bldg, Phoenix

CALIFORNIA San Francisco, July 12 15 Sec, Dr Charles B Pinkham, 906 Forum Bldg, Sacramento

COLORADO Denver, July 6. Sec, Dr David A Strickler, 612 Empire Bldg, Denver

CONNECTICUT Hartford, Reg Bd, July 13 14 Sec, Dr Robert L Rowley, 79 Elm St, Hartford Homeo Bd, New Haven, July 13. Sec, Dr Edwin C M Hall, 82 Grand Ave, New Haven

HAWAII Honolulu, July 12 15. Sec Dr. A. L Davis, 1254 Emma Street, Honolulu

INDIANA Indianapolis, July 13 15. Sec, Dr. Wm. T. Gott, 421 State House, Indianapolis

KENTUCKY Louisville June 24 26 Sec, Dr A T. McCormack, 532 West Main Street, Louisville

MAINE Augusta, July 6 7 Sec, Dr. Adam P Leighton, 192 State St, Portland

MASSACHUSETTS Boston July 13 15 Sec, Dr Frank M Vaughan, Room 144, State House, Boston

MISSISSIPPI Jackson, June 24 25 Sec, Dr F J Underwood, Jackson

MISSOURI St Louis, June 28 July 1 Chief, Licensure, Dr Ross Hopkins Jefferson City

NEW YORK Albany, Buffalo, New York and Syracuse, June 28 July 1 Chief Mr Herbert J Hamilton, Education Bldg, Albany

NORTH CAROLINA Raleigh, June 21 25 Sec, Dr K P. B Bonner, Morehead City

NORTH DAKOTA Grand Forks, July 6 Sec, Dr G M Williamson, Grand Forks

OREGON Portland, July 6 8 Sec, Dr U C Coe 1208 Stevens Bldg, Portland

PENNSYLVANIA Philadelphia and Pittsburgh, July 6 10 Director Education, C D Koch Harrisburg

RHODE ISLAND Providence, July 1 2 Sec, Dr B U Richards, 315 State House, Providence

SOUTH CAROLINA Columbia, June 22 Sec, Dr A Earle Boozer, 505 Saluda Ave, Columbia

SOUTH DAKOTA Custer, July 20 Director, Med Lic, Dr H R. Kenaston, Bonesteel

UTAH Salt Lake City, July 6 Dir, Mr J T Hammond, 412 State Capitol Bldg, Salt Lake City

VERMONT Burlington, June 23 Sec, Dr W Scott Nay, Underhill

WASHINGTON Olympia, July 6 Director, Dept of Licenses, Mr. Charles R Maybury, Olympia

WEST VIRGINIA Martinsburg, July 6 Sec, Dr. W T. Henshaw, Charleston

WISCONSIN Milwaukee, June 29 July 1. Sec, Dr. Robert E Flynn, State Bank Bldg, La Crosse

California March Examination

Dr. Charles B Pinkham, secretary of the California Board of Medical Examiners, reports the written examination held at Los Angeles, March 8-11, 1926. The examination covered 9 subjects and included 90 questions An average of 75 per cent was required to pass. Of the 63 candidates examined, 51 passed and 12 failed. Sixty-six candidates were licensed by reciprocity and 6 by endorsement of credentials since the February meeting of the board. The following colleges were represented:

College PASSED	Year Grad	Per Cent
College of Medical Evangelists	(1925)	79 3, 83 1, 83 8, 84 2, 84 7, (1926) 81 3
[illegible] Medical School	(1925)	89 8
of [illegible]		83 2
[illegible]		83 7, 89 7
[illegible]		78
ollege		77 2, 88 4
chool		84 8
Sch		81 7
Tulane University of Louisia		81 3
Harvard University	(1923)	82 6, 84 9
University of Michigan Med		84 6, 85 9
Creighton University College		83 6
University of Nebraska Colle		82 3, 83 6
Syracuse University College		83 7
University of Oregon Medic		85 2
Jefferson Medical College of		84 9
University of Pennsylvania		87 2
Woman's Medical College of P		77
University of Texas Departmen		85 8
University of Manitoba Faculty		84 1
McGill University Faculty of Medicine	(1901)	84 9, (1920) 81 7, 83 7, (1922) 89 4
University of Berlin, Germany	(1925)*	79 6
University of Freiburg, Germany	(1918)	80 8
University of Heidelberg, Germany	(1922)	75 1
University of Kiel, Germany	(1921)*	81 4
University of Pisa, Italy	(1923)*	83 8
Univers [illegible]	*	80
Medico [illegible]	*	81 9
Univers [illegible]	*	78.3

College FAILED	Year Grad	Per Cent
College of Physicians and Surgeons of Los Angeles	(1920)	52
St Louis University School of Medicine	(1925)	74 6
University of Berlin, Germany	(1913) 53 6, (1916)	72 7
University of Göttingen, Germany	(1925)	74 1
University of Munich, Germany	(1917)	68 6
National University of Athens, Greece	(1923)	58 1
Faculty of Medicine, Guatemala	(1923)*	51.9
University of Budapest, Hungary	(1922)*	71.1
University of Rome, Italy	(1916)	57 1
National School of Medicine, Mexico	(1924)	73 2
School of Medicine and Surgery, Lisbon, Portugal	(1923)	62 7

College LICENSED BY RECIPROCITY	Year Grad	Reciprocity with
Gross Medical College, Denver	(1895)	Colorado
University of Georgia Medical Department	(1924)	Georgia
Chicago College of Medicine and Surgery	(1913)	Illinois
College of Physicians and Surgeons, Chicago	(1900)	Indiana
Hahnemann Medical College and Hospital, Chicago	(1887), (1909) Oregon	Illinois
[illegible]	918)	Illinois
[illegible]	911)	Illinois
[illegible]	919)	Utah
[illegible]	904)	Indiana
[illegible]	916)	Indiana
[illegible]	904)	Washington
[illegible]	1910)	Wyoming
Kansas Medical College, Topeka	(1907)	Kansas
Kentucky School of Medicine	(1907)	Kentucky
University of Louisville School of Medicine	(1909)	Kentucky
Baltimore Medical College	(1905)	Maine
College of Physicians and Surgeons, Baltimore	(1913)	Maryland
Johns Hopkins University Dept of Med	(1918), (1923)	Maryland
University of Maryland School of Medicine	(1924)	Maryland
Harvard University	(1892)	Washington
University of Michigan Medical School	(1892)	Michigan
University of Minnesota Medical School	(1913)	Minnesota
Barnes Medical College	(1909) Kansas, (1911)	Nebraska
Ensworth Medical College	(1904)	Kansas
Marion Sims College of Medicine, St Louis	(1895)	Montana
Washington Univ School of Med	(1895) Colorado, (1913)	Missouri
John A Creighton Medical College	(1909), (1913), (1915)	Nebraska
University of Nebraska School of Medicine	(1906), (1923)	Nebraska
Columbia University College of Physicians and Sur- [illegible]	[illegible]	New York
Long [illegible]		New York
Syra [illegible]		New York
Cleveland Medical College	(1888)	Utah
Univ of Cincinnati Coll of Med	(1922) Montana, (1924)	Ohio
University of Oklahoma School of Medicine	(1922)	Wyoming
University of Oregon Medical School	[illegible]	Oregon
and		Penna.
of		New York
Sc		Wisconsin
cho		Penna
Western Pennsylvania Medical College	(1905)	Penna
Woman's Med Coll of Pennsylvania	(1912) Oregon, (1916)	New Jersey
University of Texas Department of [illegible]		Texas
University of Toronto Faculty of [illegible]		Indiana
Trinity Medical College, Toronto,		Iowa
University of Szegedin, Hungary	(1911)*	Illinois
National University of Ireland, Dublin	(1916)*	Montana

College ENDORSEMENT OF CREDENTIALS	Year Grad.	Endorsement with
George Washington University Medical School	(1905)	U. S Navy
Tufts College Medical School	(1910)	U S Army
Columbia University College of Phys. and Surgs.	(1915)	U S Army
Long Island College [illegible]		U. S Army
University of Oregon [illegible]		U. S. Army
University of Virgin [illegible]		U. S. Navy

* Verification of graduation in process

Book Notices

LES TUMEURS DU CERVEAU. Par le Professeur Viggo Christiansen, Medecin en chef de l'Hôpital royal du Danemark Avec une preface du Pr Pierre Marie Second edition Paper Price, 45 francs Pp 398, with 107 illustrations Paris Masson & Cie, 1925

This edition is dedicated to the memory of Charcot. The author states that there have been so many advances in our knowledge of the symptomatology, diagnosis and surgical treatment of intracranial new growths that the book had to be entirely rewritten Epidemic encephalitis, which is now so prevalent, sometimes simulates brain tumor, and the differential diagnosis between new growth and encephalitis had to be fully considered As in the previous edition, the subject matter is presented in the form of lectures, which does not make for dry reading in this instance. The style is clear and simple, and the descriptions are lifelike. Especially illuminating and instructive are the discussions of the significance of special symptoms and the frank acknowledgment of errors in diagnosis and failures in therapy. Three chapters are devoted to tumors of the motor region In paralyses of cerebral origin, the lower is often not as much affected as the upper extremity, because compensation from the other side occurs more often in the leg than in the arm The sternomastoid, on account of its bilateral innervation, is often unaffected, while the trapezius is usually paralyzed. Attention is called to the fact that only one group of muscles or even a single muscle may be involved, and that muscle atrophies are frequent in cortical lesions. In tumors of the occipital lobe, the representation of macular vision is not localized but extends over a considerable area in each lobe. Migraine ophthalmique is especially considered in relation to tumors of the base of the brain, and the differentiation between basilar tumors and syphilitic basilar meningitis is often difficult. The chapters devoted to tumors of the chiasmatic region and of the cerebellopontile angle give an excellent summary of our present knowledge of the symptoms of growths in these locations. The roentgen ray often does not show the extent of the changes that exist in pituitary tumors. One eye is often blind when the other still has only a defect in the temporal field of vision. Papilledema is not at all rare in pituitary growths, and may conceal a certain amount of primary optic atrophy. Christiansen believes that papilledema in pituitary tumors may be due not to a general increase of intracranial pressure but to direct pressure on the arteries and veins in the neighborhood of the growth. The chapter devoted to "difficulties in diagnosis" is worthy of careful reading, for it is a fair statement of the diagnostic problems so often encountered, and of the various methods of value for the localization of the growth. In the chapter on operative treatment, technical surgical details are not considered. Decompressive operations often give considerable palliation, but the only real successes are obtained in those cases in which the tumor can be completely removed. Whenever possible, the operation should be done in one stage, and the best results are obtained by those who have devoted themselves as specialists to neurologic surgery. The subject of tumors of the brain is so large that a book on the subject might easily be a large and ponderous volume; but Christiansen has demonstrated how much can be said in a few words when the writer is expert in the recognition and evaluation of clinical symptoms and signs.

ABDOMINAL OPERATIONS. By Sir Berkeley Moynihan. Fourth edition. Two volumes. Cloth. Price, $20 net. Pp. 1217, with 470 illustrations. Philadelphia: W. B. Saunders Company, 1926.

As in previous editions, the bulk of the material is devoted to the stomach, intestines and bile tracts. To detail the contents would be needless; they are too well known to surgeons. There are places where one may take issue with Moynihan. Even today surgery at its best is too frequently a conflict of ideas on the application of mechanical skill in the adjustment of anatomic derangement and malfunction, so a surgeon may justify an arbitrary or dogmatic attitude by logic and by brilliant results. This work is for the most part an exploitation of the author's own opinions and technic, and one reads under the spell of his personality. His ideals are of the highest:

> If I might presume to offer any advice to the surgeon who has not great and continued opportunities for practical work, I would suggest to him never to do gastro-enterostomy in the absence of a demonstrable lesion which requires it, and to leave the surgery of the gallbladder alone. No one acquainted with the truth can deny that far too many operations nowadays are done by those who having perhaps a measure of success in the trivial cases (none are trivial to a patient!) rashly embark on procedures which they are not fully competent to undertake. Surgery, after all, is an affair of the spirit; it is a fierce test of a man's technical skill sometimes; but in a grim or long fight it is above all a trial of the spirit, and there are few things that cannot be conquered if a man's heart is set on victory.

The teachings are those of a master surgeon written in a style that upholds the best traditions of English prose.

TUMORS OF THE COLON AND RECTUM: Their Pathology, Diagnosis and Treatment. By Jerome M. Lynch, M.D., Surgical Director, St. Bartholomew's Hospital, N. Y., and Joseph Felsen, M.D., Attending Pathologist, St. Bartholomew's Hospital, N. Y. Cloth. Price, $12. Pp. 259, with 123 illustrations. New York: Paul B. Hoeber, Inc., 1925.

This is a monograph de luxe, a tale built about beautiful illustrations, for about one fifth of the pages are solely illustrations, really plates, many in colors, making the work quite like an atlas. And with these there are many other fine illustrations. There is a great similarity between the gross and microscopic appearance of some of the different tumors illustrated, more, of course, in their histology, for they are uniformly cylindric-cell carcinomas, called by the authors adenocarcinomas, and for much of this repetition there is no valid excuse. It may occur, indeed, that in the course of time the use of "malignancy" for malignant tumor will conform to the best usage. Its employment, as indicated, is prevalent. But the conception of malignancy includes many characteristics, such as rapid growth, the production of a cachexia, recurrence and metastasis; and to refer to a "malignancy of the descending colon," or of any other part of the colon (pp. 200, 201 and 202) or, for that matter, of any part of the body seems to restrict the term to purely objective significance, to rob it of much of its time-honored value. Anthrax causes a malignant pustule of the bowel, and still other lesions are referred to as malignant. When a malignant tumor is meant, the statement should be malignant tumor, and not "malignancy." Naturally, most of the experience set forth by the authors has concerned carcinoma of the colon, but there is a good review of other tumors of the colon. The bibliography, indexes and many tables, especially those devoted to the results of treatment (4,013 cases), are all excellent. The work is a commendable record of research in surgery of value for reference, for libraries and for the private libraries of surgeons.

CHEMISTRY IN MODERN LIFE. By Svante August Arrhenius, Ph.D., M.D., D.Sc., Director of the Nobel Institute. Translated from the Swedish and revised by Clifford Shattuck Leonard, Ph.D., National Research Fellow, Department of Pharmacology, Yale University. Cloth. Price, $3. Pp. 286, with illustrations. New York: D. Van Nostrand Company, 1925.

Professor Arrhenius, director of the Nobel Institute, and recognized throughout the world as one of the great modern leaders in the field of chemistry, prepared this interesting introduction to his science for Swedish readers. The translation is made available as a part of the library of modern sciences. The book covers briefly all of the relations of chemistry to life, to industry and to the home. The historical background is introduced painlessly, and illustrations from life add to the human interest of the work. The book is an excellent presentation volume for the young man or woman interested in this field.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

DIE BEDEUTUNG DER ROTEN KERNE UND DES ÜBRIGEN MITTELHIRNS FÜR MUSKELTONUS, KÖRPERSTELLUNG UND LABYRINTHREFLEXE. Von Dr. G. G. J. Rademaker. Monographien aus dem Gesamtgebiete der Neurologie und Psychiatrie. Herausgegeben von O. Foerster und K. Wilmanns. Heft 44. Paper. Price, 27 marks. Pp. 340, with 212 illustrations. Berlin: Julius Springer, 1926.

Monograph on brain physiology with especial reference to the red nucleus.

THE X-RAY IN EMBRYOLOGY AND OBSTETRICS. By W. A. Newman Dorland, A.M., M.D., F.A.C.S., Professor of Gynecology and Obstetrics and Head of the Department of Obstetrics in the Post-graduate Medical School of Chicago, and Maximilian John Hubeny, M.D., F.A.C.R., F.A.C.P., Editor of Radiology. Cloth. Price $10. Pp. 420, with 259 illustrations. Saint Paul: Bruce Publishing Company, 1926.

Beautifully illustrated volume on special roentgenologic study.

HANDBUCH DER HALS-NASEN-OHREN-HEILKUNDE. Herausgegeben von A. Denker und O. Kahler. Sechster Band. Die Krankheiten des Gehörorgans. Erster Teil. Anatomie. Entwicklungsgeschichte. Physiologie. Pathologie. Untersuchungsmethoden. Therapie. Paper. Price, 96 marks. Pp. 1274, with illustrations. Berlin: Julius Springer, 1926.

Sixth volume of monumental system of diseases of ear, nose and throat.

DIET LISTS OF THE PRESBYTERIAN HOSPITAL, NEW YORK CITY. By Herbert S. Carter, A.M., M.D., Consulting Physician to the Lincoln Hospital. Third edition. Cloth. Price $2. Pp. 173. Philadelphia: W. B. Saunders Company, 1926.

Practical and complete outline of established diets for all conditions in which dietetic management is established.

Les problèmes de la physiologie normale et pathologique de l'os. Par R. Leriche, Professeur de clinique chirurgicale à la Faculté de Strasbourg, et A. Policard, Professeur d'histologie à la Faculté de Lyon. Paper. Price, 28 francs. Pp. 229, with 29 illustrations. Paris: Masson et Cie, 1926.

Monograph on pathology of bone.

Diätetik der Magen- und Darmkrankheiten. Von Prof. Dr. I. Boas. Diätetik und Nachbehandlung bei Operationen am Magen-Darmkanal. Von Prof. Dr. G. Kelling. Second edition. Paper. Price, 12 marks. Pp. 242, with 19 illustrations. Leipsic: Georg Thieme, 1926.

Second edition of standard work on dietetics in gastrointestinal disease.

The Technic of Nursing. By Minnie Goodnow, R.N., Directress of Nurses, Hospitals of the Graduate School of Medicine, University of Pennsylvania. Cloth. Price $2.50 net. Pp. 452, with 207 illustrations. Philadelphia: W. B. Saunders Company, 1926.

Another book of helpful hints for nurses who have to practice medicine.

Emergency Surgery: The Military Surgery of the World War Adapted to Civil Life. By George de Tarnowsky, M.D., F.A.C.S., D.S.M., Professor of Clinical Surgery, Loyola University Medical School. Cloth. Price $7.50. Pp. 718, with 324 illustrations. Philadelphia: Lea & Febiger, 1926.

Practical help in surgery for the general practitioner.

Les races et les peuples de la terre. Par J. Deniker, Docteur ès sciences, bibliothécaire du muséum d'histoire naturelle. Second edition. Cloth. Price, 65 francs. Pp. 750, with 340 illustrations. Paris: Masson et Cie, 1926.

New edition of work on general anthropology first issued in 1900.

Chirurgie du sympathique. Chirurgie du tonus musculaire. La section des rameaux communicants. Par P. Wertheimer, et A. Bonniot, Chirurgien des hôpitaux de Grenoble. Préface du Pr. Leriche. Paper. Price, 22 francs. Pp. 134, with 21 illustrations. Paris: Masson et Cie, 1926.

Technical monograph on sympathectomy.

Massage und Gymnastik im Dienste der Kosmetik: Beiheft zum Handbuch der Massage und Heilgymnastik. Von Dr. Fr. Kirchberg, Lektor für Massage und Heilgymnastik an der Universität Berlin. Boards. Price, 3.90 marks. Pp. 99 with 26 illustrations. Leipsic: Georg Thieme, 1926.

Massage for wrinkles and fat removal.

Troubles des échanges nutritifs; physiologie-pathologie-thérapeutique. Volumes 1 and 2. Par Ch. Achard, Professeur de clinique médicale a la Faculté de médecine de Paris. Paper. Price 110 francs. Pp. 1220, with illustrations. Paris: Masson et Cie, 1926.

French consideration of general metabolic disturbances.

Handbuch der Massage und Heilgymnastik. Von Dr. Med. Fritz Kirchberg, Lektor fur Massage und Heilgymnastik an der Universität Berlin. Band I. Paper. Price, 14.40 marks. Pp. 279, with 90 illustrations. Leipzic: Georg Thieme, 1926.

Scientific consideration of massage and gymnastics.

Nurses' State Board Questions and Answers. By R. Max Goepp, M.D., Professor of Principles and Practice of Medicine and of Clinical Medicine at the Woman's Medical College of Pennsylvania. Cloth. Price, $2.50 net. Pp. 373. Philadelphia: W. B. Saunders Company, 1926.

First aid to the doubtful in nurses' exams.

Handbuch der biologischen Arbeitsmethoden. Herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden, Direktor des physiologischen Institutes der Universität Halle a. d. Saale. Abt. V, Methoden zum Studium der Funktionen der einzelnen Organe des tierischen Organismus, Teil 5 B, Heft 4. Methoden zur Untersuchung des überlebenden Zentralnervensystems. Von Hans Winterstein. Die Methoden zur Funktionsprüfung von Muskeln und Nerven beim Menschen mittels des galvanischen und faradischen Stromes. Von Georg Grund. Lieferung 188. Paper. Price, 3.90 marks. Pp. 428-510 with illustrations. Berlin: Urban & Schwarzenberg, 1926.

American Pocket Medical Dictionary: Containing the Pronunciation and Definition of all the Principal Terms Used in Medicine, Surgery, Dentistry, Veterinary Medicine, Nursing and Kindred Sciences: With Over 60 Extensive Tables. By W. A. Newman Dorland, A.M., M.D., Member of the Committee on Nomenclature and Classification of Diseases of the American Medical Association. Thirteenth edition. Leather. Price $2 net. Pp. 777. Philadelphia: W. B. Saunders Company, 1926.

Our Times: The United States, 1900-1925. Vol. I. The Turn of the Century. By Mark Sullivan. Cloth. Price, $5. Pp. 610, with illustrations. New York: Charles Scribner's Sons, 1926.

Transactions of the American Surgical Association. Volume forty-three. Philadelphia, 1925.

Medicolegal

Right to Results of Laboratory Analysis of Organs

(Travelers' Ins. Co. v. Jackson, Judge (Iowa), 206 N. W. R. 98)

The Supreme Court of Iowa says that, in an action on a policy of accident insurance which expressly excluded liability for death by suicide, the insurance company averred that the death of the insured resulted from suicide. A necropsy on the body was conducted by two physicians selected by the plaintiff in that case and by two other physicians selected by the insurance company, all of whom acted in cooperation. Then the two physicians representing the company took certain organs from the body for a laboratory analysis, it being averred on one side, and denied on the other, that those physicians agreed that the results of the analysis should be communicated to the physicians for the plaintiff. That the plaintiff subsequently obtained from the district court an order that the insurance company should produce and furnish to the plaintiff "all papers, findings, records, entries and memoranda of laboratory analyses and inspection of the tissues and vital organs" of the insured, in its possession or under its control, as would tend to show that his death was due to an accident. That order was made under the provision of section 4654 of the Iowa code that the district court may in its discretion, by rule, require the production of any papers or books which are material to the just determination of any cause pending before it, for the purpose of being inspected and copied by or for the party calling for them. The legality of the order made was challenged in this proceeding, by certiorari, to test it.

The only showing in support of the application for the order was that there had been a laboratory analysis. Perhaps it ought to be assumed that such laboratory analysis would contain many details which could be safely preserved only by committing them then and there to paper. There was no showing that there was in existence any other paper, record or finding which could in any manner serve any purpose to the applicant as material and admissible evidence. It was, however, suggested, and assumed in argument, that the two physicians who represented the insurance company had communicated, perhaps by letter, with the company, and had expressed opinions including doubts on various features of the necropsy and of the laboratory analysis. No reason was apparent why such sweeping terms should be used in the order unless they were intended to include all communications by such physicians to their own employer on the subject under consideration. Manifestly, such "papers" would not be admissible in evidence. It might be that if the necropsy disclosed all the vital organs to be normal and healthy, such fact might be material and proper to be considered in connection with other facts tending to show accidental death. But that the applicant was not entitled to the production of private letters, or communications, or memoranda, or opinions, or findings, by the two physicians to the insurance company as their employer, was quite clear. None of such items would be admissible as instruments of evidence, though the applicant might gain practical advantages in the trial of the case, because of their perusal. The statute, however, cannot be used to such an end. To say the least, therefore, the order was too broad.

Could the direct results of the laboratory analysis be deemed a "paper" within the meaning of the statute? Must it be assumed that those results were committed to paper? As against this, it was to be said that both parties in the presentation of their case here had assumed that the results of the analysis were committed to paper, and that this was furnished to the insurance company. In view of the fact that the results of the laboratory analysis would be material on the trial, and that they would be provable in some manner, and that the insurance company had the exclusive access to them, and that no other analysis was practicable, the supreme court is disposed to solve the doubt in favor of the order of the trial court at this point, and to let the order stand so far as it relates to the direct results of the laboratory analysis.

The order will be modified so as to require the insurance company to furnish a copy of the direct results of the laboratory analysis, and to exempt it from furnishing private correspondence or memoranda or expressions of opinion as between it and the physicians employed by it. To this extent the order of the district court will be annulled, and in all other respects affirmed.

Eye Made Not to Coordinate with Other Counted Lost

(Suggs v. Ternstedt Mfg. Co. et al. (Mich.), 206 N. W. R. 490)

The Supreme Court of Michigan says that the plaintiff, by an accident that arose out of and in the course of his employment, received an injury by a particle of steel becoming embedded in his right eye. As a result of the injury, a traumatic cataract formed, which was removed by an operation. After the operation he had one-sixtieth normal vision without the use of a glass, while with a strong glass his vision with that eye was above normal, but his two eyes did not coordinate. If he used the uninjured eye, he could not wear the strong glass on the other. If he used the injured eye with the strong glass, he had to cover the other eye. In other words, the testimony established that, while he had useful vision with each eye, he could use but one of them at a time. Under these circumstances the department of labor and industry held that he was entitled to the statutory compensation for the loss of an eye, and the award which it granted is affirmed by the supreme court.

What Expert Testimony Should Do—Injury to Vision

(City of Kingfisher et al. v. State Industrial Commission et al. (Okla.), 242 Pac. R. 217)

The Supreme Court of Oklahoma, in affirming an award of compensation made by the industrial commission, says that the claimant while in the employ of the city of Kingfisher as assistant engineer in the water works department had some boiler compound of soda, ash and lime splash out of a tank into his face and right eye, injuring his vision. Very much of the expert evidence in the case was conflicting, inconsistent and unintelligent. Expert testimony should serve the purpose of making clearer to the ordinary mind facts that are obscure and understood only by scientific study, skill and experience, and such testimony should be definite and certain, and explanatory of the point under consideration.

With regard to compensation under the workmen's compensation law of Oklahoma, the court holds that where the injured employee has lost all practical use of an eye as a result of an injury, such employee is entitled to compensation irrespective of his ability to continue to perform the work in which he was engaged at the time of his injury. The test as to the rights of an injured employee to receive compensation is dependent only on his having received an accidental personal injury resulting in such a permanent partial disability as is provided for in the schedule of the compensation law.

Diseased "Alien Seamen" to Be Treated in Hospitals

(United States v. New York & Cuba Mail S. S. Co. (U. S.), 46 Sup. Ct. R. 114)

The Supreme Court of the United States holds that the term "alien seamen" means seamen who are aliens, as it is used in the act of 1920, which provides that alien seamen found on arrival in ports of the United States to be afflicted with any of the disabilities or diseases mentioned in section 35 of the Alien Immigration Act of 1917, including any loathsome or dangerous contagious disease, shall be placed in a hospital designated by the immigration official in charge at the port of arrival and treated, all expenses connected therewith to be borne by the owner or master of the vessel; and that where a cure cannot be effected within a reasonable time the return of the alien seamen shall be enforced on or at the expense of the vessel on which they came. In other words, the term "alien seamen" means, not seamen on foreign vessels only, but aliens employed as seamen on any vessel arriving in the United States; and it was intended to extend the provisions of section 35 by providing that the hospital expenses incurred in treating any such diseased alien should be borne in all cases by the vessel bringing him in, whether carrying passengers or freight, and without reference to the time when the disease might have been detected. Nor, when applied to American vessels, is the act as thus construed repugnant to the due process cause of the fifth amendment to the constitution, on the ground of imposing liability without causation or causal connection. The power of Congress to forbid aliens and classes of aliens from coming within the borders of the United States is unquestionable. This power may be exercised in reference to alien seamen as well as other aliens, and if they are found to be diseased when brought into an American port, the vessel, whether American or foreign, may lawfully be required to bear the expenses of their medical treatment.

Competence of Physician to Give Opinion on Sanity

(Commonwealth v. Cavalier (Pa.), 131 Atl. R. 229)

The Supreme Court of Pennsylvania, in affirming a judgment of conviction of the defendant of murder in the first degree, says that the defense attempted to be made for him was that he was mentally incompetent and insane at the time of the killing. To meet that defense the commonwealth called, among other witnesses, a physician who, in answer to a hypothetic question, gave it as his professional opinion that the defendant knew the nature and quality of his act, and could distinguish between right and wrong. It was urged that the physician was not competent to express an opinion. He was a practicing physician, a graduate of the University of Pennsylvania, and at the time of the trial had been engaged in the practice of his profession for between four and five years. He was at no time connected with an institution having for its main purpose the treatment of mental disease, and had not seen many cases of insanity. He had as a part of his medical education studied the subject of insanity, and would appear to have at least the general knowledge of the subject that the ordinary medical practitioner has. The question of the competence of a witness to testify as an expert is usually for the discretion of the trial court, and the supreme court is not convinced that there was an abuse of discretion in receiving the testimony. It would be an impracticable thing to lay down a hard and fast rule as to how much experience a practicing physician must have had with insane persons to qualify him to speak as an expert. The supreme court thinks that the determination of this question is wisely left with the trial judge, who has the witness before him, and is better competent than the supreme court is to judge of his capacity to express an opinion. The weight to be given his opinion is, of course, for the jury.

Action for Not Properly Furnishing Treatment Barred

(Chalmers v. Southern Pac. Co. (U. S.), 8 Fed. R. (2d) 480)

The United States Circuit Court of Appeals, ninth circuit, in affirming a judgment of nonsuit, says that the complaint stated that while the plaintiff was in the employ of the defendant and it was under contract, in consideration of a payment by him of 75 cents a month, to furnish him with medical and surgical treatment in case of injury, he suffered an injury and by reason of the defendant's failure to use roentgen-ray appliances to diagnose the broken bone the treatment furnished proved valueless. The question presented for consideration here was the character of the action. Whatever might be said of the cause of action disclosed by the complaint, the court saw no escape from the conclusion that the cause of action disclosed by the testimony was an action ex delicto (for a wrongful act or neglect), within the meaning of the statute of limitations of the state of California, as construed by its highest court, because under the testimony the alleged breach of contract consisted, not in a failure or refusal to furnish medical and surgical treatment or hospital care and attention, but in a failure to furnish medical and surgical treatment with due care and in a proper manner. Therefore, under the settled rule in California, the cause of action disclosed by the testimony was barred after one year by the statute of limitations.

Society Proceedings

COMING MEETINGS

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20 23. Dr F H McMechan, Avon Lake, Ohio, Sec'y.

Montana, Medica [illegible] July 16 17. Dr. E G. Balsam, 222 Hart Albin [illegible] etary.

Oklahoma State [illegible] lahoma City, June 22 24 Dr. C A Thompso [illegible] Muskogee, Secretary.

Wyoming State Medical Society, Lander, July 12 13. Dr. Earl Whedon, Sheridan, Secretary

ASSOCIATION OF AMERICAN PHYSICIANS

Forty First Annual Meeting, held at Atlantic City, N J, May 4 5, 1926

(Continued from page 1862)

The Circulation and Its Measurement

Dr. H W. Haggard, New Haven, Conn: In this study we tried to find out what reserve the heart might have. We took fifty students, many of them good athletes We first measured the stroke index; but this is disturbed by the pulse, which shows variations during effort. One man rode a bicycle till he fell off, at first the pulse went up, and later fell. There are two compensatory mechanisms affecting this: 1. Value of the heart as a pump 2 The amount of oxygenation of the blood We find that the output of the heart remains the same at rest as in exercise There is an increase up to the maximal point, but this cannot be raised. When we measure the amount from the resting point to the maximal output, we find that the best heart has the largest range. There is an increased oxygen consumption of 3,400 per minute, which is the greatest increase from resting The man with the greatest increase in oxygen consumption has the best heart. The best rate showed an increase of five and one-half times from resting, the worst man had an increase of two. This is the difference in the grading of men as regards cardiac reserve

DISCUSSION

Dr G Canby Robinson, Nashville, Tenn: The blood flow is diminished when patients sit up, and further diminished when they stand. We are accustomed to believe that the circulatory effect has something to do with diminished output of the heart Patients improve when they assume a sitting position, so we can say that patients improve when the output is actually diminished. We have studied the output of the heart under the influence of digitalis in animals, using the Trick method. The output is about 25 per cent less Here we have some evidence that the circulation may be improved when the outflow of the heart is increased. I believe that the balance between the two sides of the heart is more readily adjusted when the heart is putting out less blood than when there is increased amount of blood

Dr B S Oppenheimer, New York: We have been measuring blood flow by the method of Henderson and Haggard, in twenty-one normal subjects and sixteen cases of valvular disease, and in hypertensive disease with and without auricular fibrillation. In the normal cases the results were sufficiently consistent to be satisfactory. They agreed with the Henderson and Haggard figures. In the cardiac cases, the results were consistent, but there is a certain degree of dyspnea in most cases. There was reduction of the outflow per minute, with smaller output per day. There was also increase of consumption of arterial oxygen.

Dr. Charles F. Hoover, Cleveland: In cardiac patients with retention of body fluids, the clinician has difficulty in demonstrating where the accumulation of blood may be, where the failure in hydraulics of the circulation occurs. Cardiac failure and failure in hydraulics are not the same thing. We have seen patients with great respiratory distress make very satisfactory progress, but we could not prove any difference in volume flow. We tried studying heat loss by air from the lung, but there was no evidence of genuine hydraulic failure. We must differentiate between circulatory failure and hydraulic failure.

Blood Flow During Rest and Exercise in Normal Man

Drs. A. V. Bock, L M. Hurxthal, J. F. Lawrence and D. V. Dill, Boston: We have made a special study of the work of the heart during rest and exercise. There is a remarkable shift of blood being pumped from the heart with change of position. When the subject sits in a chair the blood flow drops from 20 to 30 per cent from the prone position, and on standing there is a drop of from 40 to 50 per cent. These changes account, perhaps, for the feeling of fainting or dizziness both in the well and in the sick. The pulse pressure is completely lost when the subject faints. In our tests we have had the subjects standing at attention in a rigid upright posture. The standing position is necessitated by gravity for returning blood to the right side of the heart, and the vital capacity is increased from 6 to 8 per cent when standing. In cardiac cases there is a change of from 25 to 30 per cent when the patient is standing; thus, the change is much increased in the cardiac patient. This is at variance with the old theory that the vitality capacity is a mechanism purely related to the movement of the costal muscles. In regard to the reactions of the body to exercise, determinations of the blood flow in patients on a stationary bicycle were made, the work being 15 miles an hour, pulling 9 pounds weight. There were 15 liters a minute increase in blood flow. The oxygen consumption per minute and blood flow were increased with increased metabolism. We found that there was a steady coefficient of utilization of oxygen up to 1,200 cc. of blood The pulse rate bears relation to the total ventilation curve. We found that the amount of oxygen taken out of the inspired air is definitely limited, and the same thing is true of the amount of carbon dioxide utilization. The body seems to make an effort to keep the percentage of carbon dioxide in the body at a constant figure. There is at present considerable mystery as to what is back of the maximum of respiration, that is, what is keeping the body in a steady condition of carbon dioxide elimination.

Clinical Physiology of the Stomach

Drs A L Bloomfield and C. S. Keffer, Baltimore: We have made studies of the pure gastric juice with its hydrogen ion content in gastric motility. First we did an estimation of the secretion during a ten minute period in different individuals We found differences of from 10 to 70 cc. of juice in ten minutes, and in normal persons it varies from 10 to 40 cc The total acid of the pure juice varies from 120 cc to zero. We found no reason to believe that the total acid was less normal at 20 than when it was 60. We expected that there would be a relation between the volume of secretion and the degree of acid, but there is no relation at all There was no relation found between the volume of the secretion and the total volume of fluid and the emptying of the stomach. Some stomachs empty very quickly. The emptying time of the stomach varies from fifteen to ninety minutes The emptying of the stomach presented no relation to the acid content Persons were examined under basal conditions with repeated observations to see whether they were more or less constant from week to week. It was found that curves corresponded very closely in the same subjects The amount of acid is a constant feature. The volume of secretion is fairly constant. The motility has great variation in the same subject on different occasions.

DISCUSSION

Dr W E. Dixon, Oxford, England: The point of view of physicians is that the contents of the duodenum are passing to the stomach and back from the stomach to the duodenum. It can be proved that the amount of acid varies from time to time, within a few minutes when there are two tubes in different parts of the stomach. Different degrees of acidity and different degrees of digestive power can be observed. The old idea that the acid of the stomach has to do with the pancreas is entirely wrong.

Dr A. L. Bloomfield, Baltimore: The matter of bile regurgitation was absolutely controlled in these subjects. Although these volumes were passed in ten minute intervals, the study of the secretion was done over an hour or more on the stomach; therefore the studies show that the secretion is more constant.

So-Called Lipoid Nephrosis

DRS. LOUIS M. WARFIELD and F. D. MURPHY, Milwaukee: The "large white kidney" has been described for many years. It has been found that tubular lesions were not due to inflammatory degeneration. Some observers, however, believe that the cases are preceded by glomerular nephritis, but it is not really proved whether glomerular nephritis precedes or follows. The disease is insidious. It is usually seen in young persons; it begins with headache and malaise, but kidney function is good. The urine shows crystals (doubly refracting lipoids), probably cholesterin esters. We feel that the lesion in these cases has something to do with the colloid metabolism of the body. The cases go from onset to death without any inflammatory symptoms. Probably it is not the result of a chronic inflammatory lesion, but lipoid degeneration of the kidney may follow glomerular nephritis. A characteristic of these lipoid nephroses is the edema, which is fluctuating and does not seem to be influenced by treatment. We did not get much result from thyroid treatment, but it has some effect. *The prognosis in these cases is fairly good.* The differentiation between pure lipoid nephrosis and glomerular nephritis with secondary degeneration of the tubules is often diffcult. We have a patient under observation who had an attack of glomerular nephritis last September. At present he is in a quiescent stage. The kidney function tests show normal fluid. The blood cholesterol is high. Doubly refracting lipoids have not been found yet, but we shall find them soon. This type of case has been confused with pure lipoid nephrosis. The characteristic feature is the periodicity of the edema. The diagnosis of these conditions does not depend on any test, but is based on fulfilment of the reactions enunciated by us and on the findings of those who have followed the disease through its course to the postmortem examination.

DISCUSSION

DR. D. VAN SLYKE, New York: We have had cases that have had every characteristic of Dr. Warfield's cases, with good function and normal blood pressure, intense albuminuria, that seem to be in every way typical of pure lipoid nephrosis. The patients gradually develop urea retention, and two have died from characteristic uremia. I do not know whether these cases started as a pure nephrosis or whether they were cases of acute glomerular nephritis. This may be the secondary stage. Nephrosis, perhaps, may be expected to follow kidney insufficiency, uremia.

DR. J. P. O'HARE, Boston: There are two points worthy of emphasis. There are two ways of making a diagnosis. In subacute glomerular nephritis there is a similar sediment with red blood cells, yet not small round tubule cells. In uncomplicated nephrosis, there are no cells at all and but rarely red blood cells. Nephrosis of this type ordinarily reacts better to diuretics such as calcium than does glomerular nephritis.

DR. LOUIS M. WARFIELD, Milwaukee: I do not know how to make the diagnosis, except to follow the cases a long time. When there are red blood cells in the urine, it cannot be a pure case of nephrosis, but has an inflammatory condition added.

Results of Thyroidectomy for Hyperthyroidism as Indicated by Examination a Year or More Following Operation

DR. CHARLES A. ELLIOTT, Boston: Severe hyperthyroidism is a progressively injurious disease and should be controlled. A subtotal thyroidectomy stopped symptoms in seventy-one out of seventy-four hyperthyroid cases; three patients were myxedematous. There was permanent visceral injury in forty-seven out of sixty-four cases, and thirty-seven cases with residual injury. In twelve patients, permanent disability was evident.

DISCUSSION

DR. JOSEPH L. MILLER, Chicago: I should like to ask whether Dr. Elliott noticed any deleterious effects from the use of iodine in any cases of toxic adenoma.

DR. N. B. FOSTER, New York: I should like to confirm one observation, and that is that we occasionally see favorable results following iodine administration in toxic adenoma. Occasionally cases respond to thyroxin, which should make them worse.

DR. W M. BOOTHBY, Rochester, Minn.: Dr. Elliott's report agrees in the main with the experience of many of us. His report of improvement with iodine in the adenomatous goiter is larger than we obtain. The differential diagnosis varies in different places. On the more strict classification of the adenomatous goiter, the reports of improvement of cases of adenomatous goiter will be less than if the classification is made on a more liberal basis. If they have symptoms characteristic of the disease they are almost invariably controlled On the other hand, adenomatous goiter with hyperthyroidism is not predictable, and the case may or may not be made better with iodine; it may be made worse. There is one other guide, an important point which must be remembered in making postoperative observations, and that is the question of parathyroid insufficiency. We are beginning to observe this in the postoperative studies of maximal subtotal thyroidectomies; there is a more frequent occurrence of permanent parathyroid insufficiency. There is developing what we should recognize as a new syndrome. We have seen nothing like it before. This syndrome is often confused with a myxedematous syndrome, while there is no real myxedema. There are no obvious symptoms of tetany. The tetanic symptoms have been adjusted, yet the essential picture is one of weakness and plastic immobility.

DR. CHARLES A. ELLIOTT, Boston: I give iodine in the exophthalmic goiter cases with the certainty of getting results and knowing that the metabolic rate will go down. Then we feel that operation is a safe procedure. In the toxic adenomatous group we give iodine under careful observation, realizing that some of these patients are apparently made worse. I was surprised in adding up the figures in this small group to find that there was very little difference in the response to iodine in the two groups. I said nothing about postoperative tetany. We have noticed that, especially in the last six months. The cases so far have been mild and respond to the specific hormone. We do not know what the ultimate outcome may be. So far as the use of iodine during the postoperative period is concerned, the experimental work of Narine has justified us in the assumption that hyperplasia of the thyroid does not occur readily in the presence of iodine; therefore one method is the routine giving of iodine postoperatively.

Hypothyroidism as a Cause of Intractable Constipation

DR. THOMAS R. BROWN, Baltimore: In patients with intractable constipation, with sluggishness in motility, increase of weight, and in whom a resection of the colon seems to be the only mode of relief, we have suggested the use of thyroid extract, 6 grains (0.4 Gm.) daily, continued for as long a time as is needed to relieve the symptoms entirely. We have studied the influence of thyroid function on intestinal motility, and have made 199 readings in two years. The majority of the patients were women in the fourth to sixth decades of life. Digestive disturbance and constipation were the chief complaints. In half of these patients the basal metabolic rate was from — 10 to — 19. A few had hyperthyroidism. Cases occurring in more than one member of a family suggested a familial relation. The symptoms usually included more or less mental dulness, darkness of the skin, mental fatigue and digestive disturbance. Most of these patients had been told that they had intestinal toxemia. All but three had marked constipation. In nine it was intractable. Roentgen-ray examination showed that the position of the stomach and colon was normal. Small doses of thyroid extract seemed to have a beneficial effect; in the intractable cases it seemed to be the only thing that produced effect. Constipation returned when the drug was stopped; therefore it was found that it should be continued indefinitely. The dose was from one-fourth grain to 6 grains (from 0.016 to 0.4 Gm.) daily.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

126: 237-495 (April) 1926

Nutritive Value of Various Layers of Wheat and Corn Kernel. A. Klein, B. Harrow, L. Pine and C. Funk, New York.—p. 237.

*Nature and Time Relations of Compression Sounds of Korotkov in Man. H. M. Korns, Cleveland.—p. 247.

Egg Yolk as Source of Antiscorbutic Vitamin. J. E. Dougherty, Madison, Wis.—p. 265.

Effects Obtained from Feeding Fresh Suprarenal Cortex, Medulla and Whole Gland to Standard White Rat. E. B. McKinley, New York, and N. F. Fisher, Chicago.—p. 268.

Brain Stem: Conditions Under Which Extract of Posterior Lobe of Hypophysis Causes Increase in Body Temperature. F. T. Rogers, Dallas, Texas.—p. 284.

Effect of Amytal Anesthesia on Response to Intravenous Injection of Glucose. H. M. Hines, J. D. Boyd and C. E. Leese, Iowa City. —p. 293.

Effects of Roentgen Ray on Pancreas. N. F. Fisher, J. T. Groot and A. Bachem, Chicago.—p. 299.

*Formation of Bile Pigment from Hemoglobin. F. C. Mann, C. Sheard, J. L. Bollman and E. J. Baldes, Rochester, Minn.—p. 306.

*Hydrogenated Vegetable Oil as Source of Vitamin E. C. Kennedy and L. S. Palmer, St. Paul —p. 316.

Electric Capacity of Animal Tissues Under Normal and Pathologic Conditions. G. W. Crile, A. F. Rowland and G. H. Crile, Cleveland. —p. 320.

*Diet in Relation to Reproducing and Rearing of Young. I. Vitamin E. V. E. Nelson, R. L. Jones, V. G. Heller, T. B. Parks and E. I. Fulmer, Ames, Iowa.—p. 325.

Id. II. A. E. Guest, V. E. Nelson, T. B. Parks and E. I. Fulmer, Ames, Iowa.—p. 339.

*Roentgen-Ray Observations of Hunger Contractions in Man. F. T. Rogers and C. L. Martin, Dallas, Texas.—p. 349.

Respiratory Changes During Airplane Flight to High Altitudes. E. C. Schneider, New York, and R. W. Clarke, Middletown, Conn.—p. 354.

Permeability of Living Cells VI. Penetration of Certain Oxidation-Reduction Indicators as Influenced by *p*H; Estimation of rH of Valonia. M. M. Brooks, Washington, D. C.—p. 360.

Estimation of Surface Area of White Rat. G. G. Carman and H. H. Mitchell, Urbana, Ill.—p. 380.

Effect of Excessive Amounts of Vitamin B on Basal Metabolism of Rats of Different Ages. H. H. Mitchell and G. G. Carman, Urbana, Ill. —p. 385.

Composition of Gains in Weight and Utilization of Food Energy in Growing Rats. H. H. Mitchell and G. G. Carman, Urbana, Ill.—p. 398.

Action of Acids on Turtle Heart Muscle: Penetration of Anions. H. W. Smith, Boston.—p. 411.

Nerve Impulse. II. Decrement. H. Davis, A. Forbes, D. Brunswick and A. M. Hopkins, Boston.—p. 448.

Production of Some of Phenomena Peculiar to Parathyroid Overdosage in Dogs by Means of Certain Inorganic Salts. J. B. Collip, Alberta, Canada.—p. 472.

Site of Reabsorption in Kidney Tubule of Necturus. H. L. White and F. O. Schmitt, St. Louis.—p. 483.

Compression Sounds of Korotkov.—Contributory evidence is brought forward by Korns in support of the reasonable assumption that the mechanism which operates to produce the Korotkov sounds in man is identical with the water hammer action that Erlanger has found to be the cause of arterial sounds in animals. Furthermore, it is demonstrated that initiation of the hydraulic impact of water hammer is characterized by sound vibrations of relatively short period. The general similarity of the vibrations at all levels of decompressing pressure indicates that the Korotkov sounds originate in an impact at one fixed spot. There is no evidence that eddies or whorls contribute to sound production. Division of the Korotkov sounds into so-called "phases" seems unwarranted. It is suggested that in this respect the clinical conception of the sounds is in need of revision.

Formation of Bile Pigment from Hemoglobin.—The investigations made by Mann et al. have proved that: Bilirubin is formed in the spleen and marrow; it is formed from hemoglobin; hematin appears as an intermediate product in the formation of bilirubin from hemoglobin.

Hydrogenated Vegetable Oil Source of Vitamin E.—Kennedy and Palmer show that successful reproduction can be secured in three successive generations of rats on the Evans and Bishop sterility diet when lard is replaced by hydrogenated vegetable oil. It may be inferred from these observations that hydrogenation does not destroy the fertility factor, vitamin E.

Diet and Reproduction.—It appears to Nelson et al. that data are by no means conclusive for the existence of unknown dietary factors for reproduction and milk secretion.

Study of Hunger Contractions.—Rogers and Martin observed that the type I hunger contractions of Carlson's classification are essentially strong circular contractions of the lower half of the stomach, involving particularly a band of muscle near the junction of the middle and lower thirds of the stomach. This type of hunger contraction may or may not be associated with active peristalsis. Type III contractions consist of active peristaltic waves running over a hypertonic stomach.

American Journal of Roentgenology and Radium Therapy, New York

15: 295-398 (April) 1926

Roentgen-Ray Diagnosis of Pedunculated Growths and Gastric Mucosa Prolapsing Through Pylorus. E. L. Eliason, E. P. Pendergrass, and V. W. M. Wright, Philadelphia.—p. 295.

*Additional Roentgen-Ray Signs of Chronic Gastritis. A. Bassler, New York.—p. 323.

Subacute Intestinal Obstruction with Unusual Dilatation of Colon, Shown Roentgenographically. E. W. Lipschutz, New York.—p. 326.

Myositis Ossificans Progressiva. L. F. Magruder, Norfolk, Va.—p. 328.

Roentgen-Ray Treatment of Spontaneous, Posttraumatic and Postoperative Coccus Infections and Suppurations. Holzknecht, Vienna.—p. 332.

Broad Ligament Extension in Carcinoma of Cervix. C. L. Martin and F. T. Rogers, Dallas, Texas.—p. 336.

Protection of Technical Assistants and of Those Handling Large Quantities of Radium or Radon. C. H. Viol, Pittsburgh.—p. 345.

Dosage Tables as Aid to Simplification of Roentgen-Ray Technic by Cross-Fire Method. W. L. Mattick and W. Stenström, Buffalo.—p. 360.

New Radium Applicator for Treatment of Uterine Carcinoma. G. E. Pfahler, Philadelphia —p. 365.

Roentgen-Ray Signs of Chronic Gastritis.—The lesser and greater curvatures of the stomach are in regular outline even when the peristaltic waves are active in the properly fitted, normal stomach. Bassler finds that, in well-established chronic gastritis, the regular line is much changed in appearance, as some of the ulcerated states of the left colon and sigmoid testify. Often in chronic gastritis, numerous small indentures and bulgings, none of them much more than a centimeter in depth or height, are seen along the greater curvature, but only occasionally along the lesser. With this the whole stomach displays a lack of regular, large, sweeping peristaltic phenomena—the waves, when of some size, being irregular and in other instances the whole organ being bag-like and inactive as far as normal peristalsis is concerned. This serration of the greater curvature outline may be definitely localized such as in the pyloric region and at the base of the cap, or, as is most often seen, in the lower two thirds of the greater curvature. The third important point in the finding is that the irregularity of the lower outline is noted only in the films or observations made in the prone position and is completely obliterated in those made in the upright. Bassler's explanation of this phenomenon is that in organic disease of the mucosa of the stomach, when deep enough to comprise involvement well into the mucosa, the fibrils into it from the nervous plexus under it are cut off or the function distributed so that normal peristaltic phenomena are interfered with. Instead, then, of stimuli passing along through the stomach walls in succession of stimulation and inhibition, thus producing the large and regular normal peristaltic waves, the whole mechanism is thrown out of regularity and the waves are made hectic and local only here and there. The latter are mostly brought about by lack of proper passing of stimulation in a circular way around the organ, producing in a transverse line across the stomach the phenomena of contraction, dilatation and inactivity on the line in different locations. The interference with the proper nerve function likewise diminishes the power of such waves as are present, thus making the organ more bag-like, which, when the disease of the mucosa is general, increases the capacity of the organ (dilatation) but does not do this if the catarrhal process is localized such as in the pyloric region.

Annals of Otology, Rhinology and Laryngology, St. Louis

35: 1-248 (March) 1926

Operation for Removal of Sphenopalatine Ganglion. E. C. Sewall, San Francisco.—p. 1.
Anatomic and Surgical Consideration of Certain Cervical Abscesses Complicating Mastoiditis: Report of Cases. I. D. Kelley, Jr., St. Louis.—p. 23.
Artificial Pneumothorax in Treatment of Pulmonary Tuberculosis: Effects on Larynx. J. P. Dworetzky, Liberty, N. Y.—p. 42.
Unusual Ethmoidal Finding. S. R. Skillern, Philadelphia.—p. 71.
Mucous Glands of Palate in Relation to Upper Pole of Tonsil. H. L. Baum, Denver.—p. 87.
Aural Quackery and Pseudomedicine. A. J. Cramp, Chicago.—p. 91.
Influence of Partial and Complete Occlusion of External Auditory Canals on Air and Bone Transmitted Sound. A. G. Pohlman, St. Louis, and F. W. Kranz, Geneva, Ill.—p. 113.
Auditory Facts and Theories. V. O. Knudsen, Berkeley, Calif., and I. H. Jones, Los Angeles.—p. 122. C'td.
Congenital Occlusion of Choanae. K. A. Phelps, Minneapolis.—p. 143.
Hyperthyroidism: Significance in Otolaryngology. J. M. Waugh, Cleveland.—p. 152.
Significance of Science of Speech Correction. M. A. Goldstein, St. Louis.—p. 161.
New Methods and Apparatus for Testing Hearing. H. Fletcher, New York.—p. 165.
Mastoiditis in Diabetes Complicated with Diabetic Facial Paralysis. E. M. Seydell, Wichita, Kan.—p. 181.
Treatment of Common Head Cold. F. N. Sperry, New Haven, Conn.—p. 192.
Atmospheric Factor in Causation of Colds. W. A. Wells, Washington, D. C.—p. 199.
Bronchoscope as Aid for Performance of Tracheotomy. F. O. Lewis, Philadelphia.—p. 211.
Globus Hystericus Frequently Sexual Neurosis. J. B. Potts, Omaha.—p. 213.

Archives of Otolaryngology, Chicago

3: 301-402 (April) 1926

Surgical Diathermy in Laryngology. G. B. New, Rochester, Minn.—p. 301.
Cancer of Larynx. J. E. MacKenty, New York.—p. 305.
*Use of Physical Agents in Partial Deafness. A. R. Hollender and M. H. Cottle, Chicago.—p. 338.
Gradenigo's Syndrome in Mastoid Disease: Report of Case. H. Dintenfass, Philadelphia.—p. 349.
Cholesteatomatitis. M. Metzenbaum and O. Eisinger, Cleveland.—p. 353.
Needle Gone Astray (in Rosenmueller Eminence). S. Cohen, Philadelphia.—p. 357.
Laryngeal Stenosis. H. Meyersburg, New York.—p. 358.
Fibroid Tumor of Eustachian Tube. J. G. Hunt, London, Ont.—p. 363.
Lateral Tilting Table. S. Iglauer, Cincinnati.—p. 364.
Tonsils and Adenoids. A. W. Proetz, St. Louis.—p. 365.

Treatment of Partial Deafness.—Clinical experience in a fairly large series of cases has demonstrated to Hollender and Cottle that electrophysical therapy is of some value in chronic catarrhal deafness even after other accepted measures have failed. The improvement obtained is dependent on four important factors: (1) nature and extent of pathologic change; (2) correct apparatus and electrodes; (3) proper application based on anatomic principles; (4) persistent treatment over a long period of time.

Archives of Pathology and Laboratory Medicine, Chicago

1: 499-680 (April) 1926

*Bilateral Carotid Arteritis. F. Harbitz, Oslo, Norway.—p. 499.
*Granuloma Venereum (Inguinale). M. Goldzieher and S. M. Peck, New York.—p. 511.
*Congenital Sarcoma of Tibia. A. Kolodny, Iowa City.—p. 524.
*Familial Juvenile Cirrhosis of Liver. F. D. Gunn, Buffalo.—p. 527.
*Simultaneous Occurrence of Carcinoma and Tuberculosis of Uterus. E. S. Gais, Chicago.—p. 542.
*Folliculoma Ovarii: Case. P. J. Manheims, New York.—p. 557.
Aneurysm of Ascending Aorta Communicating with Pulmonary Artery: Case. F. D. Gunn, Buffalo.—p. 562.
Carcinoma of Thymus and Occlusion of Superior Vena Cava. D. Brannan, Pittsburgh.—p. 569.
Manganese in Urine: Its Detection. R. F. McCrackan and E. Passamaneck, Richmond, Va.—p. 585.
Blood Pipet Carrier. G. L. Rohdenburg, New York.—p. 588.
Local or Tissue Immunity. F. P. Gay, New York.—p. 590.

Bilateral Carotid Arteritis.—A case of bilateral carotid arteritis with thrombosis is described by Harbitz, and the question is raised whether it concerns a distinct form of arterial disease.

Granuloma Venereum.—Seven cases of granuloma inguinale have been studied by Goldzieher and Peck. An organism that is biologically and morphologically identical has been observed in all cases. Pure cultures were obtained in five cases. The etiologic agent of venereal granuloma is termed *Bacillus venereogranulomatis*—a proper genus of the family *Bacteriacae*. The etiologic rôle of the organism described is supported by the results of complement fixation, allergic tests and animal experiments.

Congenital Sarcoma of Tibia.—Kolodny reports a case of congenital sarcoma of the tibia occurring in a girl, aged 8 weeks. A high thigh amputation was made. The patient is now 8 years old, well and without evidence of a recurrence or metastases.

Familial Juvenile Cirrhosis of Liver.—A case of cirrhosis of the liver occurring in a girl, aged 4 years, who, during her illness, because of a marked enlargement of the spleen, presented a picture of some form of splenic anemia, is reported by Gunn. The girl died. Necropsy revealed atrophic cirrhosis of the liver, cirrhosis of the pancreas and histologic changes in the spleen of the nature of a diffuse fibrosis and fibro-adenitis of the follicles, as described by Banti for Banti's disease. Besides this, a high-grade myeloid metaplasia was found in the spleen and lymph nodes, which is assumed to be of secondary nature. A brother of this child had exhibited the same clinical picture, and had died at about the same age, three years previously.

Associated Carcinoma and Tuberculosis of Uterus.—In a case of associated tuberculosis and carcinoma of the body of the uterus reported by Gais, the latter process was apparently the older one, the tuberculosis developing later as the result of the localization of bacilli from an older distant focus. From the literature, twenty-seven cases in which tuberculosis was associated with carcinoma of the uterus and its adnexa are summarized. Of the total twenty-eight cases now on record, four were tubal carcinomas, eight were carcinomas of the body of the uterus, and sixteen were carcinomas of the cervix.

Folliculoma Ovarii.—A solid tumor of the ovary, 18 by 12 cm., was removed by Manheims from a widow, aged 52, a tripara. Histologic examination showed a large number of roset-like alveoli held together by a stroma composed of spindle cells with relatively long fibrils. In about 30 per cent of the lumina of the rosets, polyhedral shaped isolated cells were found, with clear cytoplasm and deeply staining masses of chromatin, apparently nuclei. Usually these cells were free in the lumina. The tumor belongs to that type described by Gottschalk, and called by him "folliculoma malignum ovarii."

Arkansas Medical Society Journal, Little Rock

22: 231-254 (April) 1926

History of Arkansas Industrial University Medical Department. J. H. Lenow, Little Rock.—p. 231.
Conditions Affecting Practice of Medicine. F. B. Young, Gering, Neb.—p. 233.

Boston Medical and Surgical Journal

194: 661-708 (April 15) 1926

*Aspiration of Joints. R. C. Lonergan, Boston.—p. 661.
Case of Sarcomatosis of Skin. J. K. Narat, Chicago.—p. 664.
Hospital Administration from Viewpoint of Clinician. H. A. Christian, Boston.—p. 668.
Dietitian and Her Job. E. M. Thallman, Boston.—p. 673.

194: 709-758 (April 22) 1926

Skin Diseases in Industrial Clinic. D. C. Parmenter and S. Dubreuilh, Boston.—p. 709.
Addison's Disease: Cases. W. H. Swan and L. W. Bortree, Colorado Springs.—p. 712.
Cod Liver Oil as Source of Fat Soluble Vitamins. A. D. Holmes, Stoneham.—p. 714.
Progress of Gastro-Enterology in 1925. A. E. Austin, Boston.—p. 732.
Treatment of Wounds with Dichloramin-T. D. S. Adams, Worcester.—p. 737.

Aspiration of Joints.—The value of aspiration of joints as a therapeutic procedure in septic joints of low virulency is discussed by Lonergan. He says that it will often control the process. The procedure may be repeated, if necessary. Simple measures, such as Bier's hyperemia, poulticing and the use of hot compresses, seem to aid in the convalescence. Such patients may often be saved by arthrotomy, and the possible risk of an open operation avoided if they are aspirated and then carefully watched.

Illinois Medical Journal, Oak Park

49: 265-352 (April) 1926

Teamwork for Health of People. W. D. Haggard, Nashville, Tenn. —p. 297.
Health as Business Asset. R. L. Wilbur, San Francisco.—p. 300.
Surgery of Gallbladder. W. J. Mayo, Rochester, Minn.—p. 303.
Institutionalized Epileptics. T. G. Hall, Dixon, and C. F. Read, Chicago. —p. 305.
Choice of Intestinal Anastomosis from Anatomic and Technical Standpoint, Excluding Rectum. W. J. Sullivan, Chicago.—p. 310.
Diagnosis and Treatment of Infections of Female Pelvic Organs. H. Schmitz, Chicago.—p. 314.
Community Goiter Prevention and Education. W. J. Potts, Oak Park. —p. 316.
Parallelism: Apparent Similarity and Close Resemblance Between Tuberculosis and Leprosy. O. E. Denney, Carville, La., and J. Ritter, Chicago.—p. 318.
Thrombo-Angiitis Obliterans. J. D. Claridge, Chicago.—p. 328.
Credit Rating and Collection Bureau of Vermilion County Medical Society. E. G. C. Williams, Danville.—p. 332.
County Health Unit. T. Parran, Jr., Springfield.—p. 334.
Venereal Diseases of Anus and Rectum. C. J. Drueck, Chicago.—p. 339.
Luminal Poisoning with Conjunctival Residue. E. S. Hamilton, C. W Geiger and J. H. Roth, Kankakee.—p. 344.
As Others (Seem to) See Us. H. N. Jennett, Kansas City, Mo.—p. 346.
Ephedrine. G. F. Fiske, Chicago —p. 348.

Indiana State Medical Association Journal, Ft. Wayne

19: 135-184 (April) 1926

*Acute Alimentary Disturbances in Infants. A. G. Mitchell, Cincinnati. —p. 135.
Repair of Perineum. W. H. Williams, Lebanon.—p. 145.
Insulin Treatment of Diabetes. G. W. McCaskey, Fort Wayne.—p. 149.
Sponge Control in Operating Room. F. H. Jett, Terre Haute.—p. 152.
*Intra-Abdominal Hernia: Case. L. W. Elston, Fort Wayne.—p. 157.
What We Know About Ventilation. A. C. Willard, Urbana, Ill.—p. 159.

Acute Alimentary Disturbances in Children.—A clinical study made by Mitchell of thirty-five children and an analysis of the results of others have convinced him that in infants who had clinical evidence of dehydration the determination of the blood urea nitrogen, uric acid and the carbon dioxide of the blood plasma showed different values, depending on whether or not the infants were suffering from toxic symptoms and hyperpnea. If no toxic symptoms were observed, the blood nonprotein nitrogen constituents were practically normal. If moderate toxic symptoms were present, there usually was a moderate increase of nonprotein constituents, but if the patient showed distinct evidence of toxic symptoms, the blood urea nitrogen and uric acid usually were decidedly increased over normal, although the increase was neither consistent enough nor great enough to indicate that uremia was a primary cause of the fatal termination. A decrease in the carbon dioxide capacity of the blood plasma was found when the dehydrated infants showed clinical evidence of hyperpnea. In other infants in whom hyperpnea was not noticeable, but who were moderately toxic and whose blood usually contained an increase in nonprotein nitrogen constituents, the plasma showed a diminished carbon dioxide capacity in some instances. Usually, however, the carbon dioxide capacity of the plasma was normal when there was no increase in the respiratory rate and depth. The alkali reserve was usually greatly diminished before death. However, since in several infants this did not occur and in several, with equally low alkali reserve, recovery followed, it would seem that the acidosis is an accompanying phenomenon and not a primary cause of either the condition or its fatal termination.

Intra-Abdominal Hernia.—Sudden generalized abdominal pain accompanied by nausea and vomiting, followed by a similar attack four months later was the history of Elston's patient, a girl, aged 16. Abdominal tenderness, with slight rigidity and tympanites, were objective symptoms. At operation there was found a small, evidently congenital, aperture, in the root of the mesentery, hard and ringlike, about as large as a lead pencil. The bowel which had herniated through this aperture was about 76 inches (193 cm.) in length and was gangrenous. The herniated bowel began about 4 inches above the cecal junction and extended toward the jejunum. It was resected and an end to end anastomosis was done by the use of a button which was recovered on the ninth day, and the patient left the hospital in apparent good health.

Iowa State Medical Society Journal, Des Moines

16: 153-204 (April) 1926

Diagnostic Net: Surgical Viewpoint. P. A. White, Davenport.—p. 159.
Morbid Attitudes and Beliefs. C. M. Campbell, Boston.—p. 164.
Pancreatic Disease: Cases. A. A. Johnson, Council Bluffs.—p. 169.
Early Recognition of Arsenic Poisoning Due to Neo-Arsphenamine: Treatment. R. S. Grossman, Marshalltown.—p. 175.
Traumatism of Head and Brain in Civil Practice. G. M. Hackler, Dallas, Texas—p. 177.
*Blood Transfusion. L. D. Powell, Rochester, Minn.—p. 180.
Postoperative Massive Collapse of Lung: Case. J. C. Shellito, Independence.—p. 186.
Tularemia in Iowa. W. R. Whiteis and E. J. Anthony, Iowa City.—p. 188.
Vomiting of Pregnancy. E. A. Conrad, Decorah.—p. 189.

Blood Transfusion.—Investigation of twenty-five donors who had made more than twenty-five donations each, Powell states, has shown weakness and secondary anemia in only four cases. Five of the donors had given more than fifty, and one had given sixty-three, transfusions. One of the twenty-five who returned recently to be reexamined with regard to the advisability of giving more donations was found to have active pulmonary tuberculosis. One was weak; two had moderate secondary anemia, and the remainder had normal blood and their general health was excellent. This shows that the same donors may be used repeatedly without ill effects to themselves. Because of its simplicity, safety and satisfactory results, the indirect method with sodium citrate is preferred by Powell.

Journal of Bacteriology, Baltimore

11: 229-303 (April) 1926

Microbic Heredity. VI. Infective and Taxonomic Significance of Newly Described Ascospore Stage for Fungi of Blastomycosis. R. R. Mellon, Rochester, N. Y.—p. 229.
Bacterial Spores. I. Thermal Resistance as Affected by Age and Environment. C. A. Magoon, Washington, D. C.—p. 253.
"Pin Point Colony" Organisms in Baltimore Milk Supply. J. C. Swenarton, Baltimore.—p. 285.
Oxalic Acid Test for Indol. S. A. Koser and R. H. Galt, Urbana, Ill. —p. 293.

Journal of Clinical Investigation, Baltimore

2: 299-407 (April) 1926

Effect of Standard Exercise on Oxygen Consumption of Normal, Overweight and Chronically Ill Individuals. B. D. Bowen and M. E. Carmer, Buffalo.—p. 299.
*Effect of Phenylhydrazine Derivatives in Treatment of Polycythemia. P. H. Long, Boston.—p. 315.
*Experimental Anemia Produced by Phenylhydrazine Derivatives. P. H. Long, Boston.—p. 329.
Apparatus for Cinematographic Observation of Human Capillaries. J. H. Crawford and H. Rosenberger, New York.—p. 343.
Capillary Circulation in Normal Subjects. J. H. Crawford, New York. —p. 351.
Human Capillaries in Cases of Auricular Fibrillation. J. H. Crawford, New York.—p. 365.
*Jaundice Following Pulmonary Infarction in Patients with Myocardial Insufficiency. I and II. C. S. Keefer and W. H. Resnik, Baltimore. —pp. 375 and 389.

Phenylhydrazine Derivatives in Polycythemia.—The therapeutic effect of phenylhydrazine hydrochloride and acetyl phenylhydrazine was studied by Long in three cases of polycythemia vera, and one case of secondary polycythemia or hypertension. The best results with phenylhydrazine were achieved in the treatment of polycythemia vera. In this condition, with no discomfort to the patient, the blood can be reduced to normal and held there with ease for a considerable period of time. With a normal blood picture, these patients lose the symptoms of their polycythemia and are greatly benefited. In no case could Long detect any signs of liver injury arising from phenylhydrazine.

Experimental Anemia Produced by Phenylhydrazine Derivatives.—An anemia, pursuing a similar course in all the experiments, was produced by Long by the intraperitoneal injection of phenylhydrazine derivatives in rabbits. When the anemia was established, it was possible to demonstrate the presence of methemoglobin in the blood serum. There was a marked increase in the percentage and total number of reticulated red blood cells in the peripheral blood during the period of the anemia, and the hematopoietic system underwent a marked hyperplasia, which progressed until red blood cell production overbalanced red blood cell destruction.

A marked increase in the number of phagocytic cells containing intact red blood cells and pigment was found in the spleen, bone marrow and lymph nodes during the anemia. It was not possible to demonstrate the presence of bilirubin in the blood plasma of the rabbits during the anemic stage. Urobilinogen appeared in the urine on the first day after the injection of phenylhydrazine and remained in demonstrable amounts for about three weeks.

Jaundice in Myocardial Insufficiency.—Keefer and Resnik reported ten cases of myocardial insufficiency in which the sudden appearance of visible jaundice, or the sudden increase in jaundice that was already present seemed directly dependent on the development of pulmonary infarction. The jaundice was due, in all instances, to bilirubinemia. In all these cases, the clinical course was very similar, for death, due to progressive myocardial failure, occurred within a relatively short time.

Journal of Comparative Neurology, Philadelphia

40: 253 408 (April 15) 1926

Development of Motility and Behavior Reactions in Toadfish (Opsanus Tau) H C Tracy, Lawrence, Kan —p 253.
Innervation and Nerve Terminations of Reptilian Lung A. C. Jones, Portland, Ore —p 371
Role of Cells of Medullary Origin in Development of Sympathetic Trunks A. Kuntz, St Louis —p 389.

Journal of Experimental Medicine, Baltimore

43: 443 590 (April) 1926

*Effect of Antiserum Against Soluble Toxic Substance of Bacillus Coli in B Coli Peritonitis B Steinberg and E C Ecker, Cleveland.—p 443
Reaction of Cow's Milk to Blood Serum Precipitin. F. S. Jones, Princeton, N. J —p 451.
Transformation of Monocytes into Fibroblasts Through Action of Rous Virus A. Carrel and A H. Ebeling, New York —p 461.
*Anaphylactic Shock Caused by Antibody in Animals Sensitized by Antigen—Reversed Passive Anaphylaxis E L. Opie and J. Furth, Philadelphia —p 469
*Effect of Jejunostomy in Experimental Obstruction of Jejunum of Dog. R L. Haden and T G Orr, Kansas City, Kan —p 483
Calcification of Suprarenal *Glands of Cats* D. *Marine, New York* —p 495
*Syphilitic Myocarditis in Rabbit W. H. Brown and L Pearce, New York —p 501
Cultivation of Rickettsia Like Micro-Organisms from Rocky Mountain Spotted Fever Tick, Dermacentor Andersoni. H. Noguchi, New York —p. 515.
*Experimental Bone Marrow Reactions I. Anemia Produced by Collargol G L Muller, Boston —p 533
Epidemiologic Studies on Respiratory Infections of Rabbit. VII Pneumonias Associated with Bacterium Lepisepticum. L. T. Webster, New York —p 555
Id VIII Carriers of Bacterium Lepisepticum. L T. Webster, New York —p 573.

Bacillus Coli Antiserum.—From young cultures of *B. coli* (from eighteen to twenty-four hour cultures), a soluble toxic substance was obtained by Steinberg and Ecker and an antiserum against this toxic substance was produced. The soluble toxic substance is the principal lethal factor when cultures of *B. coli* are injected into the peritoneal cavity of rabbits. Intravenous administration of the antiserum can avert death in rabbits previously injected intraperitoneally with lethal doses of *B. coli*.

Reversed Passive Anaphylaxis.—Opie and Furth found that anaphylactic shock occurs (in rabbits) when the usual procedure for the production of passive anaphylaxis is reversed; that is, when an animal previously treated with antigen receives the corresponding antiserum by way of the circulating blood.

Effect of Jejunostomy in Experimental Obstruction.—Haden and Orr summarize their findings as follows: Jejunostomy does not prevent the development of the chemical changes of the blood characteristic of obstruction of the jejunum in the dog. Jejunostomy following experimental obstruction of the jejunum has no beneficial effect on the duration of life. There is some evidence that life may be shortened by early jejunostomy. Treatment of jejunal obstruction with physiologic sodium chloride solution tends to prolong the life of animals, regardless of jejunostomy.

Syphilitic Myocarditis in Rabbit.—In the course of routine postmortem examinations of rabbits infected with *Spirochaeta pallida*, six cases of pronounced granulomatous myocarditis were encountered by Brown and Pearce. Spirochetes were not demonstrated in the lesions, but the clinical history and the gross and microscopic appearance of the lesions seemed to warrant a diagnosis of syphilitic myocarditis. The lesions measured 1 cm or more in diameter and histologically were practically identical with those described by Warthin in cases of syphilitic myocarditis in man. These are said to be the first cases of syphilitic myocarditis or of visceral syphilis in the rabbit that have been reported

Experimental Bone Marrow Reactions.—Muller describes the effect produced by the intravenous administration of collargol on the bone marrow of rabbits. Three fairly well defined stages could be recognized: (*a*) an initial stage after comparatively few and small doses, with erythrocytic and endothelial hyperplasia in the bone marrow and with evidences of this stimulation in the peripheral blood in the form of young erythrocytes and normoblasts; (*b*) an intermediary stage which followed the injection of larger amounts of collargol, and which was characterized by a predominant myeloid hyperplasia; (*c*) a final stage with marked bone marrow aplasia and with colloidal silver deposited in endothelial cells as well as in clasmatocytes This was associated with a high grade anemia with low color index, resembling aplastic anemia in its main features. This stage terminated fatally It is suggested that the results may be offered in support of the theory of the endothelial origin of both clasmatocytes and red blood cells.

Journal of General Physiology, Baltimore

8: 303 401 (April 20) 1926

Photolysis of Luminescent Granules of Eucharis Multicornis. A. R. Moore, Naples —p 303
*Nature of Diphtheria Toxin. K. G. Dernby, Stockholm, Sweden.—p 311.
Swelling and Osmotic Pressure of Gelatin in Salt Solutions. J. H. Northrop and M Kunitz, New York —p 317
Activation of Starfish Eggs by Acids. R S Lillie, Chicago —p 339.
Micrurgical Studies in Cell Physiology: Action of Chlorides of Sodium, Potassium, Calcium and Magnesium on Protoplasm of Ameba Proteus R Chambers and P Reznikoff, New York.—p 369.

Nature of Diphtheria Toxin.—The formation of diphtheria toxin is explained by Dernby as follows: The toxin is to its greatest part neither secreted from the living cells, nor is it extracted from the dead bacilli. The bacilli grow, die, and autolyze Simultaneously, proteolytic enzymes of a specific character are liberated These enzymes attack the albumoses and peptones of the autolyzed bacilli as well as of the broth, and some of the primary split products are the toxic substances If the proteolysis proceeds further, the toxin will be disintegrated also.

Journal of Industrial Hygiene, Baltimore

8: 143 210 (April) 1926

Occupational Diseases Reported to Ohio State Department of Health for *Five Year Period Ending June 30, 1925. E R. Hayhurst*, Columbus, Ohio, and D J Kindel, Cincinnati —p 143
Estimation of Zinc in Biologic Material L T. Fairhall, Boston —p 165.
Normal Occurrence of Zinc in Biologic Materials. Review of Literature, Normal Distribution of Zinc in Rat, Cat and Man. R E. Lutz, Boston —p. 177.

Journal of Nervous and Mental Diseases, New York

63: 313-432 (April) 1926

Character of Modern Psychiatry: Synthetic Presentation of Work of Paul Schilder. S Parker, New York —p 313
Diffuse Glioma (Gliosis) Two Cases. F. P Moersch, Rochester, Minn. —p 343
Facial Diplegia in Neo Arsphenamine Polyneuritis G B. Hassin and C F Read, Chicago —p. 352
Postencephalitic Respiratory Disorders S. E Jelliffe, New York —p. 357.

Journal of Parasitology, Urbana, Ill.

12: 117-181 (March) 1926

Morphologic Studies on Trichomonas M. Tanabe, Baltimore —p 120.
Morphology and Cultivation of Embadomonas Cuniculi N. Sp J. Collier and W C. Boeck, Boston.—p 131.
Tylenchus Balsamophilus, New Plant Parasitic Nematode. G Thorne, Salt Lake City —p 141
Endolimax Caviae N Sp. from Guinea Pig and Endolimax Janisae N. Sp. from Domestic Fowl. R. W Hegner, Baltimore —p 146
Cultivation of Trichomonas, Thermal Death Point, Anaerobic Conditions, Attempts at Sterilization J. M. Andrews, Baltimore —p. 149.

Journal of Urology, Baltimore

15: 341-407 (April) 1926

- *Results with Intravenous Chemotherapy in Urinary Infections. W. F. Braasch and H. C Bumpus, Jr, Rochester, Minn—p 341.
- *Therapeutic Value of Mercurochrome, Hexamethylenamine, and Hexylresorcinol in Experimental Urinary Infection in Rabbits H. F. Helmholz and R S Field, Rochester, Minn—p 351
- Changes of Urine Reaction Vital Factor in Treatment of Primary Acute Bacterial Cystitis N Blaustein, New York—p 363
- *Ammonium Chloride as Urinary Acidifier M Muschat, Philadelphia.—p 375
- Foreign Bodies (Hairpin, Nail) in Bladder W T Briggs, Lexington, Ky—p 383
- Spermatocele M Dorne, Chicago—p 389
- *Reduplication of Ureter and Pelvis J. K. Ormond, Detroit.—p 397.
- *Intra Urethral Chancroids W D Goodman, Washington, D C—p. 403.
- *Massive Bilateral Hydrocele S R Woodruff, New York—p 407.

Intravenous Chemotherapy in Urinary Infections.—Of the various mediums employed by Braasch and Bumpus with intravenous chemotherapy, mercurochrome-220 soluble has been effective in acute and subacute infections of the urinary tract and in occasional cases of acute general sepsis of various types. In chronic infections involving the urinary tract and other tissues, it is not of great therapeutic value. The greatest objection to its intravenous use is its toxicity. Severe reactions are common, marked by prostration, chills and dysentery Two of the 196 patients who received intravenous injections of mercurochrome at the Mayo Clinic during the last year died Necropsy in one case demonstrated that in the absence of any other cause of death toxemia was the probable lethal factor. It is evident, therefore, that mercurochrome should be used intravenously only if emergency demands it. Although the element of danger is ever present, nevertheless, in cases of acute sepsis, when other measures have failed, it merits trial

Therapeutic Value of Mercurochrome, Methenamine and Hexylresorcinol.—Helmholz and Field summarize their results as follows In the dosages used, methenamine is superior to mercurochrome and hexylresorcinol as a urinary antiseptic in cases of infection produced by *Staphylococcus albus* and the colon bacillus *Staphylococcus albus* seems to be very much more vulnerable to the action of methenamine than is the colon bacillus

Ammonium Chloride as Urine Acidifier.—Studies made by Muschat show the value of ammonium chloride as an acidifier of the urine Ammonium chloride in a dosage of 1 Gm (15 grains), three times daily, causes a decided increase in the normal urinary acidity Ammonium chloride in the same dosage may be used to change the reaction in cases of alkaline cystitis

Reduplication of Ureter and Pelvis.—In the case cited by Ormond there was a double pelvis and two ureters, which united in the bladder wall and emptied into the bladder by one orifice.

Intra-Urethral Chancroids.—In Goodman's case, endoscopic examination revealed six small, discrete, tender ulcers, 6 cm from the meatus These ulcers were sharply defined, with a depressed necrotic center, duplicating each other on the contiguous sides of the urethral wall, each measuring about 2 mm. in diameter. These lesions had somewhat the appearance of herpes simplex on the oral mucosa. The remainder of the urethra appeared normal. Cultures were positive for Ducrey's bacillus. Dark field examinations of the urethral lesions were negative for *Spirochaeta pallida* Goodman has found only two cases of intra-urethral chancroid reported during the last forty years.

Bilateral Hydrocele.—In Woodruff's case, the right sac contained 2,220 cc of fluid, and the left sac, 1,800 cc. A plastic operation was done on the skin of the scrotum for shortening

Kansas Medical Society Journal, Topeka

26: 105-136 (April) 1926

- Artificial Pneumothorax. R. G. Breuer, Norton—p 105.
- Some Successes and Failures in Obstetrics. R. A. West, Wichita.—p 107
- Traumatic Glycosuria: Relation to Diabetes Mellitus W. C. Menninger, Topeka—p. 109.
- Physiotherapy in Treatment of Prostatic Disturbances. W. C. Chaney, Independence—p 113.

Kentucky Medical Journal, Bowling Green

24: 161 200 (April) 1926

- Chemical Significance of Wassermann Reaction. J. D. Allen, Louisville.—p. 163
- Diagnostic Significance of Abnormal Heart Sounds. E. F. Horine, Louisville—p. 166
- Pulmonary Tuberculosis· Diagnosis. E. M. Trabue, Louisville.—p 171.
- Id Roentgen Ray Findings I. T. Fugate, Louisville.—p. 176.
- Id. Climatology A. M Barnett, Louisville.—p 177.
- Id Surgery of Suppuration. W. I. Hume, Louisville—p 178.
- Id. Exercise in Treatment. C. M Garth, Louisville—p 179.
- Rural Medicine Health Officer. E P. Whistler, Louisville—p. 184
- Rural Therapy. D A Bates, Louisville—p. 184
- Diphtheria J. H Pritchett, Louisville—p. 187.
- Traumatic Rupture of Urocyst: Case. J. H. Peak, Louisville—p 190.
- The Spine. J. W. Bayless, Louisville—p 193.

Laryngoscope, St. Louis

36: 157 234 (March) 1926

- History of Bronchoscopy and Esophagoscopy for Foreign Body. E. J. Patterson, Pittsburgh—p. 157.
- Upper Lobe Bronchoscope. M C. Myerson, New York.—p. 179.
- Exostoses of Cervical Vertebrae as Cause for Difficulty in Swallowing. H P Mosher, Boston.—p 181.
- Traumatic Perforation of Esophagus. H. B. Orton, Newark, N. J—p 183.
- Anterior Dislocation of Atlas as Cause for Inability to Swallow Solid Foods H B. Orton, Newark, N J—p. 188
- Roentgenogram of Interesting Esophageal Distortion. H. Hall, New York—p 190
- Emphysema of Neck and Chest (Preoperative) Following Inhalations of Piece of Nut H H Forbes, New York.—p 192.
- Obscure Chest Conditions with Positive Bronchoscopic Findings Including Two Cases of Syphilis of Trachea and Bronchi. M. C. Myerson, New York—p 193.
- Phantom Foreign Body (Spasm) of Larynx. M. C. Myerson, New York.—p 197
- Foreign Body Introduced Transpleurally and Removed via Bronchus Three Years Later. C J. Imperatori, New York—p 200.
- Foreign Body Removed from Bronchus After Being in Situ Over Three Years C J Imperatori, New York—p 202.
- Bronchoscope as Invaluable Aid for Performance of Tracheotomy in Certain Class of Cases F. O Lewis, Philadelphia—p. 204
- Foreign Bodies in Tracheobronchial Tree: Report of Cases in Which Bronchoscopy Was Not Done L H. Clerf, Philadelphia—p. 206
- Surgical Diathermy for Tumors of Trachea. H. H. Bowling and P. P. Vinson, Rochester, Minn—p 217.

Medical Journal and Record, New York

123: 485 562 (April 21) 1926

- Problem Method of Medical Teaching A. D. Bush, Atlanta—p. 485.
- More Fallacies Concerning Hemorrhoids J. F. Montague, New York.—p 487
- Cancer Willy Meyer, New York—p. 488.
- Palliative Treatment of Inoperable Cancer. J. K. Narat, Chicago—p 491.
- Multiple Osteochondromatosis. J. Epstein, New York.—p 494.
- Case of Pyelonephritis with Persistent Hematuria L. Vaccaro, Philadelphia—p 496
- Case of Suppurating Fibro Adenoma of Breast. M. W. Bulman, Norwich England—p 498.
- Plastic Surgery of Nose. A G Bettman, Portland, Ore.—p 499
- Mac[illegible] or Congenital Hypertrophy. E. D. Fenner, New Orleans. [illegible]
- History of Ether in Treatment of Suppurative Otitis Media. G. B. McAuliffe, New York.—p 503
- Action of Arsphenamine J Schumacher, Berlin—p. 506.
- Mercury in Treatment of Syphilis L. Spiegel, New York—p 510.

Nebraska State Medical Journal, Norfolk

11: 128 168 (April) 1926

- Classification of Glycosurias F. Conlin, Omaha.—p. 129.
- Family Physician as Supervisor of Child Health. H. E. Harvey, Fairbury—p 138
- Rheumatic Fever. L. W Frank, Denver.—p. 141.
- Hand Infections J. A Weinberg, Omaha.—p. 144.
- Physician and His Community H von W. Schulte, Omaha.—p 146.
- Kidney and Bladder Infections A D. Munger, Lincoln—p 154.
- Therapy of Nephritis M. C Howard, Omaha—p. 157.

Philippine Islands Medical Association Journal, Manila

6: 78 112 (March) 1926

- Index Line in Malarial Splenomegaly. R. G. Padua and L. Lopez Rizal.—p. 78
- *Coleman Diet in Typhoid A. B M Sison and M. Ignacio—p. 84

Coleman High Calory Diet in Typhoid.—Sison and Ignacio report on the results accruing from the use of a high calory diet in typhoid. The condition of the mouth was practically not affected by the high calory diet. Nausea and vomiting and diarrhea occurred less frequently. Tympanites was slightly more frequent. Nervous symptoms were present in 9 per cent of the high calory diet cases, but in 31 per cent of the low calory diet cases the duration of the febrile period and the incidence of recrudescence were not affected by the high calory diet. The range of temperature was slightly lower in the high calory cases than in the low calory cases. Relapses were less frequent, and the duration of convalescence was shortened. Complications developed in only 11 per cent of the high calory cases. Mortality in the high calory cases was 2 per cent and in the low calory cases, 18 per cent.

Physical Therapy, X-Ray, Radium, Omaha

7: 189-250 (April) 1926

Radiation Therapy in Carcinoma of Uterine Cervix. R. E Fricke, Baltimore.—p 189
Treatment of Anterior Poliomyelitis. F. H Ewerhardt, St. Louis.—p 196
Diathermy in Angina Pectoris A E Joslyn, Lynn, Mass—p 201
*Roentgenographic Study of Sella Turcica in Abnormal Children M. B. Gordon and A L L Bell, New York.—p 211
Roentgen Ray Treatment of Aortic Aneurysms. S A. Levey, St Louis.—p 219.

Sella Turcica in Abnormal Children.—Studies were made by Gordon and Bell of the contours of the sella turcica in sixty-four abnormal children The findings were compared with those of 104 normal children. It was found that the shape of the sella does not differ significantly in normal and abnormal children. The type of disorder is not correlated with the shape of the sella There is no formation characteristic of any individual disease The excavation that has been described in mongolian idiots is extrasellar. It may be uncovered or covered by the lesser wings of the sphenoid. It is a normal foundation found with the same frequency in all children and is not characteristic of any known disorder. The size of the sella is not influenced by any of the diseases studied. As in the normal series, there was found no relationship between the size or shape of the sella and the size of the head.

South Carolina Medical Association Journal, Greenville

22: 79-98 (April) 1926

*Unusual Obstetric Experience. J. J. Lindsay, Spartanburg.—p 84.

Premature Birth with Intact Amniotic Sac.—Lindsay reports a case of premature birth at the sixth month in which the child was expelled with the amniotic sac intact. It had peeled off the placenta completely—so smoothly and entirely that not a bit of fluid had escaped. The only thing showing its attachment was the torn placental end of the umbilical cord The membrane peeling off the placenta left every blood vessel wide open and the woman bled to death in a few moments.

Southwestern Medicine, Phoenix, Ariz.

10: 151-204 (April) 1926

Magnetic Foreign Bodies in Eye: 136 Cases A Martin, Phoenix.—p 151.
Prostatic Obstruction K D. Lynch, El Paso, Texas.—p 161.
Allergy and Immunity in Tuberculous Infection. J. W. Flinn, Prescott.—p 166
Electrocardiogram C. R. Haig, El Paso, Texas.—p 170
Treatment of Hemorrhage in Obstetrics and New Born H. H Varner, El Paso, Texas.—p 173
Cause and Control of Pulmonary Hemorrhage R. B Homan, El Paso, Texas.—p 175
Diagnosis of Syphilis H M Purcell, Phoenix.—p 177
Desert Sanatorium of Southern Arizona, Inc. B L Wyatt, Tucson.—p 183

Surgery, Gynecology and Obstetrics, Chicago

42: 449-578 (April) 1926

*Congenital Dislocation of Hip V Putti, Bologna, Italy.—p 449.
Secondary *Operations on Common Bile Duct* W Walters, Rochester, Minn.—p 453
*Use of Radium and Roentgen Rays in Treatment of Malignant Diseases of Paranasal Sinuses D Quick, New York.—p 462
*Value of Peritoneal Sheets of Coalescence in Abdominal Surgery. A. Gutierrez, Buenos Aires.—p 469.
Influence of Protein Therapy on Experimental Staphylococcus Infection of Cornea of Rabbit B W Key, New York.—p 473
*Pelvic Hernia Posterior Vaginal Hernia L M Miles, Peking.—p 482
*Three Cases of Thyroid Metastasis to Bones. W. M Simpson, Ann Arbor, Mich.—p. 489
*Transplantation of Parathyroids in Partial Thyroidectomy. F H Lahey, Boston.—p 508
*Pylephlebitis and Liver Abscess Following Appendicitis E L. Eliason, Philadelphia.—p. 510.
*Anterior Abdominal Hysterotomy for Interruption of Pregnancy and Sterilization P Oginz, New York.—p 523
*End Results in Interposition Operation for Cure of Prolapsus Uteri and Cystocele F W Johnson, Boston.—p 527
Clinical Application of Recent Studies on Jaundice. A M Snell, Rochester Minn.—p 528
Appendicitis in Infancy and Childhood S J Seeger, Milwaukee.—p 536
Acquired Suppurative Diverticulitis with Pylephlebitis and Metastatic Suppuration in Liver S E Kramer, Perth Amboy, N J, and W Robinson Spokane Wash.—p 540
Glycosuria and Pregnancy H J John, Cleveland.—p 543
Internal Drainage of Common Bile Duct J Gatellier, Paris.—p 547.
*Technic of Transperitoneal Cesarean Section J. O Polak, New York.—p [illegible]
*Rational Management of Skin Grafts F Smith, Grand Rapids, Mich.—p [illegible]
Improved Syringe and Needle for Use in Regional Anesthesia J. S Lundy Rochester Minn.—p 563
Pruritus Ani Treatment by Alcohol Injection. H B Stone, Baltimore.—p [illegible]
*Treatment of Acute Postoperative Toxemia of Hyperthyroidism J. Rogers New York.—p 567
Eclampsia Etiology and Treatment H F. Kane, Washington, D C.—p [illegible]

Congenital Dislocation of Hip.—Putti outlines his method of treating dislocation of the hip and reviews the results obtained by surgical and nonsurgical treatment in 700 cases Functional and anatomic success was obtained in 80 per cent for single dislocations and 60 per cent for bilateral. On the basis of 1 879 cases with 2 556 reductions, success has resulted in 90 per cent of the single dislocations, and 65 per cent of the bilateral cases have been improved

Radiotherapy in Malignant Disease of Paranasal Sinuses.—Quick urges early surgical exploration of the paranasal sinuses and biopsy so that earlier diagnosis of new growths may be made With few exceptions, the principles applying to surgical removal of cancer, in general, cannot be carried out in dealing with growths in the paranasal sinuses. Radium and roentgen rays are of value in treating this group of cases, but except in palliative procedures, must be used in conjunction with surgery. Radium and roentgen ray may be depended on to eradicate the tumor tissue if applied accurately and uniformly throughout the growth in sufficient dosage Surgery must be employed to provide exposure for radium application and adequate drainage.

Peritoneum and Abdominal Surgery.—Gutierrez says that the peritoneal sheets of coalescence are remarkably serviceable in abdominal surgery It is through them that certain fixed segments of the digestive tract may be made movable. Intestinal mobilization represents the preliminary and fundamental element in every surgical intervention on an intestinal segment that has become secondarily fixed by the process of coalescence Gutierrez discusses briefly the formation of each of the more important sheets of coalescence.

Vaginal Hernia.—Miles reviews nine cases of vaginal hernia already on record, and reports two additional cases. The cause of these hernias, with one exception, was trauma, following pregnancy or childbearing. A new classification embracing all hernias occurring through the pelvic floor is offered, following the general usage of terminology and classifying it according to its course thus: *Pelvic hernia may be* perineal, pudendal, or vaginal, and vaginal pelvic hernia may be (*a*) anterior or (*b*) posterior Prolapse of the uterus accompanied by a general enlargement of the culdesac and protrusion of abdominal contents into the vaginal vault should be called either elytrocele or vaginal enterocele, and not a hernia The treatment is operative, and the best operation is a perineal one by which the sac is excised and the perineum is repaired, combined with an abdominal operation for obliterating the culdesac.

Thyroid Metastasis to Bones.—In the first of the three cases reported by Simpson, spontaneous fracture of the femur occurred as a result of the presence of a tumor composed of histologically benign thyroid tissue. A small goiter gave no evidence of malignancy. In the second case, the metastasis was to the astragalus. The microscopic picture was that of typical thyroid tissue, and the patient possessed a small, symmetrical goiter which was regarded as clinically benign. The third patient presented signs of vertebral neoplasm with compression myelitis, but with no clinical signs which might direct suspicion to the thyroid gland. Laminectomy exposed a hazel-nut sized tumor in the sixth cervical vertebra, which, on microscopic examination, contained areas of typical thyroid tissue. All these patients later developed unmistakable clinical evidence of malignancy of the thyroid gland, and all died within a year and a half following operation. One case came to necropsy. A review of the literature shows that there is no such entity as the "benign metastasizing goiter"; hence, the use of this confusing term should be abandoned.

Transplantation of Parathyroids in Partial Thyroidectomy.—Since parathyroids will occasionally be removed at operation and identified in the laboratory, Lahey says they should be carefully searched for on the specimen following operation, and, if found, transplanted. The belly of the sternomastoid is the most convenient place into which to transplant them, and care should be taken to see that the cavity into which they are transplanted is dry.

Pylephlebitis and Liver Abscess Following Appendicitis.—Pylephlebitis and liver abscess are not identical. Eliason says they occur as a complication in from 0.1 to 0.4 per cent of the cases of appendicitis. The prognosis is not universally bad, as 54 per cent of the patients recover. Operation through the diaphragm is the treatment of choice.

Hysterotomy.—Oginz believes that the operation of hysterotomy for the interruption of pregnancy and sterilization is of great value in certain cases of pulmonary tuberculosis, cardiac diseases, chronic nephritis and hypertension and in some unusual cases, and could be used to the patient's advantage much more often than has been the practice in this country.

Operation for Prolapsus Uteri.—Johnson reports nearly 90 per cent of cures from his treatment of these cases. He has modified the Watkins operation. The whole anterior surface of the uterus down to the cervix is sewed to the fascia of the anterior vaginal wall. Thus the uterus is firmly fixed in anteversion to the fascia, and the bladder rests on the posterior aspect of the body of the uterus.

Transperitoneal Cesarean Section.—The points emphasized by Polak in his technic are: first, the low abdominal incision; second, placing of the traction suture in the uterus at the upper limit of the abdominal incision which, when held taut, makes a perfect occlusion of the wound; third, separation of the peritoneal flap, including the bladder; fourth, delivery of the fetus by the head; fifth, allowing the placenta to separate spontaneously, and sixth, packing of the uterus with washed iodoform gauze to stimulate its contraction and retraction. This gauze is usually found in the vagina at the end of twenty-four hours. The seventh point is complete occlusion of the uterine wound by the suture of the bladder reflexion over it, which prevents the possibility of peritoneal leakage and intestinal adhesions.

Management of Skin Grafts.—Smith believes that the commonly accepted advice to allow for contraction and to cut the graft one-third to one-half larger than the area to be covered is one of the commonest sources of failure. He insists that the graft must be cut accurately to size and maintained at normal tension. For the same reason, it must be accurately approximated by carefully placed sutures.

Treatment of Acute Postoperative Toxemia of Hyperthyroidism.—In the treatment of these toxemias, Rogers recommends the subcutaneous administration of a boiled aqueous extract of the thyroid—the so-called thyroid residue. It seems to act by stimulation of the terminal filaments of the vagus or parasympathetic portion of the involuntary nervous system and so does not increase the already alarming rapidity of the heart action.

West Virginia Medical Journal, Charleston

22: 169-224 (April) 1926

Brain Tumors. W. E. Dandy, Baltimore.—p. 169.
Familial Diabetes. W. W. Strange, Huntington.—p. 174.
Fallacies in Diagnosis of Pulmonary Tuberculosis. P. H. Ringer, Asheville, N. C.—p. 175.
Acute Intestinal Obstruction. R. J. Wilkinson and W. C. Kappes, Huntington.—p. 180.
Chief Causes of Uterine Hemorrhage and Their Treatment. E. Novak, Baltimore.—p. 184.
Occiput Posterior Presentations. W. W. Point, Charleston.—p. 188.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

49: 1-156 (March) 1926

Projection of Retina in Primary Optic Neuron in Monkeys. B. Brouwer and W. P. C. Zeeman.—p. 1.
*Hepatolenticular Degeneration. S. Barnes and E. W. Hurst.—p. 36.
Rotated or "Cerebellar" Posture of Head. W. R. Brain.—p. 61.
Retina and Lateral Geniculate Body in Tupaia, Tarsius, Nycticebus and Hapale. H. H. Woolard.—p. 77.
*Prognosis in Disseminated Sclerosis. J. Taylor.—p. 105.
*Function of Right Hemisphere of Brain in Relation to Left in Speech, Music and Calculation. S. E. Henschen.—p. 110.

Hepatolenticular Degeneration.—Corneal pigmentation has been found by Barnes and Hurst in cases described as pseudosclerosis and as Wilson's disease, and in three cases without any observed nervous signs; but in every case in which a postmortem examination of the viscera has been made the presence of cirrhosis of the liver has been demonstrated. It seems clear, therefore, that the corneal pigmentation may be deposited at a stage before the nervous symptoms are so far developed as to give rise to observable clinical signs; further, it apparently never occurs before the liver it diseased.

Prognosis in Disseminated Sclerosis.—Taylor avers that the activity of the poison in disseminated sclerosis is favored by strain or accident. This emphasizes the desirability of complete rest as soon as the condition is recognized, so as to exert a favorable influence on the course of the illness.

Function of Cerebrum.—Henschen reviews facts that he believes to be in favor of the theory of a primary organization of the brain as the original cause of the predominance of the left side of the brain.

British Journal of Ophthalmology, London

10: 177-240 (April) 1926

Epithelial Cyst of Sclera. C. H. Usher.—p. 177.
Frequency of Metastatic Carcinoma of Choroid. C. H. Usher.—p. 180.
Thomson's Capsular Cataract. T. H. Butler.—p. 182.
Case of Retrobulbar Neuritis Following Septic Wound. T. H. Butler.—p. 184.
Excision of Superior Tarsus and Conjunctiva in Treatment of Trachoma. G. F. Heal.—p. 185.
Crossed Quadrant Hemianopsia. C. H. Felix.—p. 191.
Treatment of Lime Burns of Cornea by 10 Per Cent Neutral Ammonium Tartrate. E. Wolff.—p. 196.
Krukenberg's Spindles. J. D. M. Cardell.—p. 198.
Spontaneous Absorption of Mature Senile Cataract. A. J. Ballantyne.—p. 202
Case of Septic Focus in Retina of Apparently Healthy Boy Aged 15. K. W. Todd.—p. 203.
Diplopia Lamp. E. N. Hughes.—p. 205.

British Journal of Radiology, London

31: 119-162 (April) 1926

Nonopaque Foreign Bodies in Air Passages: Roentgen-Ray Diagnosis and Localization. W. F. Manges.—p. 119.
*Experiences in Irradiation of Breast Cancer. H. Wintz.—p. 150.
Dysostosis Hypophysaria. A. Schüller.—p. 156.

Roentgenotherapy of Breast Cancer.—Wintz stresses the fact that in order to obtain a cure by the roentgen-ray treatment of cancer of the breast it is essential that the requisite dose for the destruction of the carcinoma cells be applied to the axillary and supraclavicular regions as well as to the tumor itself. Of equal importance with exactly dosed treatment is a carefully planned scheme of after-treatment. For not only are toxins set free by the destruction of cancer cells, but the metabolism of normal cells is considerably changed in consequence of the large area involved. It is now the task of the body to get rid of the decayed cells and to replace the disintegrated tumor by healthy tissue. This difficult task can only be accomplished when the conditions of life outside the hospital are favorable. Special care must be taken when irradiating carcinoma of the breast to prevent lung fibrosis.

British Journal of Tuberculosis, London

20: 61-100 (April) 1926

*Roentgenography of Chest in Tuberculosis. J. E. A. Lynham.—p. 61.
Antituberculosis Campaign at Home and Abroad. W. H. Dickinson.—p. 67.
*Pretuberculous Child. A. Massey.—p. 72.
Habitat in Pulmonary Tuberculosis. F. R. Walters.—p. 77.

Use of Roentgen Ray to Estimate Lung Changes in Tuberculosis.—Lynham asserts that when it is established that a patient is suffering from pulmonary tuberculosis, although, as a rule, it is on the general clinical condition that the progress of the case must be judged, roentgenograms taken at intervals provide valuable help in estimating the changes in the lungs.

Pretuberculous Child.—A new definition of the pretuberculous child is suggested by Massey, that is, one who, by reason of tuberculous family history and contact, of past debilitating disease, or of present physical condition, is unusually likely to become the victim of active tuberculous disease; in addition the term is extended to include those children in whom the presence of tuberculosis is already suspected, but whose condition will not admit of precise diagnosis.

China Medical Journal, Shanghai

40: 309-408 (April) 1926

Changes in New U. S. Pharmacopeia. B. E. Read.—p. 309.
Preparations of New U. S. Pharmacopeia. B. E. Read.—p. 314.
Insulin Treatment of Diabetes. R. C. Robertson.—p. 318.
*Ova of Paragonimus Westermanii Encysted in Abdominal Wall. P. D. Choy and A. I. Ludlow.—p. 326.
Military Surgery in South China: Gunshot Wounds. J. O. Thomson.—p. 328.
Heart Disease. F. R. Dieuaide.—p. 344.

Paragonimus Cyst of Abdominal Wall.—Ova of *Paragonimus westermanii* were present in the sputum and in the feces in the case cited by Choy and Ludlow. In July, 1924, following an attack of fever marked by loss of appetite and constipation, the patient suffered severe pain in the epigastrium, accompanied by a swelling in the same region. After catharsis, the pain subsided but the tumor persisted and increased in size slowly until, on admission to the hospital, it was 6 cm. in diameter. The growth was slightly bluish and fairly soft. It was very vascular and adherent to both skin and the muscle fascia. In the vascular connective tissue stroma were found the ova of *Paragonimus westermanii.*

Edinburgh Medical Journal

33: 189-268 (April) 1926

*Oxycephaly. D. M. Greig.—p. 189.
*Postmortem Tuberculous Lesions in Four Hundred and Four Consecutive Examinations. T. R. R. Todd.—p. 219.

Oxycephaly.—Greig illustrates by original cases the clinical features of oxycephaly, describes in detail the skull of an adult oxycephalic patient, and distinguishes true oxycephaly from certain somewhat similar cranial deformities with which it has been confused. Incidentally, he pleads for restriction of the term "oxycephaly" to a specific cranial deformation.

Postmortem Tuberculous Lesions.—Of the total 404 cases in which Todd performed a postmortem examination, 284, or 70 per cent, showed definite signs of tuberculosis. The remaining 120 included forty-six with patches of fibrous tissue or scars in the lungs and pleurae, twelve with only pleural adhesions, and sixty-two with no signs anywhere of tuberculosis. The greatest number of cases of tuberculosis occurred in the age period of from 51 to 60; namely, eighty-one cases, or 32 per cent. There were twenty-two cases of active tuberculosis. In four of these, death was caused by other diseases. In three of the cases the focus was in the lungs, and in the fourth it was in the mesenteric glands. Calcareous lesions were found in 193 cases, caseous lesions in sixty-six cases, and healed lesions in three cases. In the latter, there were no signs of calcification or caseation. The lungs were involved in 171 cases; the lungs only in eighty-one cases. In fifty-two of these eighty-one cases the lesions were calcareous; they were caseous in twenty-four, active in four, and healed in one. Three of the four active cases were fatal. Of the caseous cases, nine were active and fifteen were latent or inactive; that is, completely encapsulated. Glands were involved in 201 cases, the bronchial lymph glands being affected in sixty. Among these adult patients, none died of tuberculosis. The lungs and bronchial glands were simultaneously affected in the same patient fifty-nine times. Two of these were fatal. The combination of lungs, bronchial and mesenteric glands occurred five times, and that of cervical, bronchial and mesenteric glands thrice. The bronchial glands were infected altogether in 144 cases, less fifteen fatal cases. The majority of the lesions in glands were calcareous, and the remainder were caseous, completely or partially encapsulated. The mesenteric lymph glands were affected in sixty-four cases, only twenty-two of these cases being in combination. The mesenteric glands are at the high level of 66 per cent during the first decennium, and then drop steadily to about 8 per cent in the fifth decennium, about which level they remain till the end. In this series of sixty-four cases, forty-six were calcareous, seventeen were caseous, and one was in the early active stage of infiltration. The size of the nodules varied, and also the number present in each case was not constant. All glands had some sort of connective tissue envelop enclosing them in the mesentery.

Glasgow Medical Journal

23: 241-320 (April) 1926

Insanity from Viewpoint of General Practitioner. R. O. Adamson and others.—p. 241.
Disorders of Capillary Vessels as Factor in Disease. H. M. Walker.—p. 286.

Indian Medical Gazette, Calcutta

61: *157-208 (April) 1926*

Pathogenic Effects of Helminthic Infections. A. C. Chandler.—p. 157.
*Curettage and Autogenous Cancellous Grafting for Myeloma. J. B. Hance.—p. 159.
*Pharmacologic Action of Some Organic Antimony Derivatives. R. N. Chopra.—p. 162.
*Entomologic Episode of East African Campaign. G. G. Jolly.—p. 164.
*Use of Emetine Intravenously. V. N. Deuskar.—p. 165.
Cholera and River Water: Epidemiologic Suggestions. G. G. Jolly.—p. 167.
Ear, Nose and Throat Diseases Among Calcutta University Students. J. K. Datta.—p. 168.
Reducing Substances in Urine: Their Detection and Identification. J. P. Bose.—p. 173.
Case of Cobra Bite. A. H. Harty.—p. 178.
Case of Recovery After Bite by Russell's Viper. K. V. Raju.—p. 179.
Murder Under Insane Hallucination. S. Lal Sarkar.—p. 179.
Case of Tuberculous Pneumonia. V. N. Deuskar.—p. 180.
Case of Myxedema Associated with Exophthalmic Goiter. R. M. Kar.—p. 181.
Case of Pseudohypertrophy. H. Prasad.—p. 182.

Treatment of Myeloma.—Hance contends that the treatment of myeloma by curettage and autogenous bone grafting is worthy of a more extended trial, and, provided rigid asepsis is observed, holds out the promise of good results. Cancellous grafts, as malleable bone forming mediums, tend, in association with graduated movements and accurate splinting, to an earlier restoration of function and symmetry than do grafts of compact bone.

Action of Organic Antimony Derivatives.—The action of a number of organic antimony derivatives has been tested by Chopra on cats. All these substances have a more or less depressing effect on the heart, circulation and respiration. The systemic blood pressure falls, while the pulmonary blood pressure rises. The volume of the spleen is markedly increased, while the volume of the intestine, kidney and limbs decreases.

Eradication of Jigger Scourge.—Being unable to control infection with jigger fleas in any other way, Jolly resorted to having the troops go barefoot with daily foot inspection and the removal of jiggers. In a month's time the jigger scourge had practically ceased to give trouble. The success of this experiment depended on the fact that the jigger flea can only breed in the body of its host, and that daily inspection prevented this by detection and removal of the female jigger before it had time to develop its eggs. The victims of the parasites themselves became the trap that lured the jigger to its destruction.

Emetine Treatment of Amebiasis.—In seventy cases of amebiasis, including six relapses, the patients were treated by Deuskar with emetine administered intravenously with a case mortality of about 12.5 per cent. Altogether over 1,000 injections were given. Nine injections, each of 1 grain (0.06 Gm.), were given on nine consecutive days, followed by an interval usually of six days, after which another six injections were similarly given, so that each patient at the end of the course received a total of 15 grains (1 Gm) of emetine The use of emetine intravenously, besides being painless, was found safe and simple and appears to be practically free from the dangers it is commonly supposed to involve

Japan Medical World, Tokyo

6 19 48 (Feb 15) 1926

Action of Ammonia on Lungs I A A Horvath —p 19 (To be cont'd)
*Formation of Urinary and Bile Duct Calculi in Animals Fed on Experimental Rations Y Fujimaki —p 29
*Coccoid Formation of B Diphtheriae C Yarisawa —p 35
General Condition of Industrial Hygiene in Japan Y Kiose —p 39

Experimental Dietary Bile Duct Calculus Formation —Fujimaki states that animals kept on the protein and vitamin A deficiency diet formed concretions in a relatively short period a shorter time than the animals fed on either vitamin A deficiency or vitamin A and C deficiency diet Animals fed on the protein deficiency diet died and did not form calculi Animals fed on the vitamin A and inorganic phosphorus and calcium deficiency diet formed calculi in a very short time In these cases bile duct stones were found taking the longest period of all Urinary calculi found among the animals fed on the vitamin A and inorganic phosphorus and calcium were carbonate calculi (while the stones of the animals fed on the vitamin A and vitamin A and C deficiency diet were phosphatic calculi) Bile duct calculi consisted of abundant calcium salts besides cholesterol and pigment

Coccoid Formation of Diphtheria Bacillus —During the repeated culture of *B diphtheriae* on Loffler's blood serum medium Yarisawa noticed that organisms of some strains assume coccoid forms Such alteration takes place sometimes even in Loffler's blood serum medium The most typical coccoid alteration takes place in blood agar culture transplanted from blood serum medium A similar phenomenon may be seen on glycerine agar or ordinary agar medium These strains are capable of producing toxin When a suspension of the coccoid organisms is injected into guinea-pigs, certain toxicity is manifested Such strains are not particularly rare Fourteen per cent of Yarisawa's collection of *B diphtheriae* strains manifested the coccoid alteration on certain mediums

Journal of Anatomy, London

60 233 344 (April) 1926

Origin of Blood Cells in Embryonal Liver of Mammals J Havet —p 233
Morphology of Thumb A L McGregor —p 259
Cutaneous Nerves of Metazonal Region of Leg and Foot C Kosinski —p 274
Coracobranchiales and Cucullaris in Scyllium Canicula F H Edgeworth —p 298
Mummification and Maceration Female and Negro Skulls T W Todd —p 309
Mesodermal Tumor of Trigon of Bladder in Female Fetus of Sixth Month H A Harris —p 329
Homologies of Prechordal Portion of Skull of Homocephali E P Allis Jr —p 335
Maldevelopment of Right Parotid Gland B Boulgakow —p 341
Unilateral Duplication of Ureter B Boulgakow and N Fahmy —p 342

Journal of Laryngology and Otology, Edinburgh

41 · 209 276 (April) 1926

Chordoma of Cervical Vertebrae with Involvement of Pharynx W S Syme and D F Cappell —p 209
*Function of Aural Cerumen E ff Creed and V E Negus —p 223
Three Cases of Suppuration in Mastoid Cells with Intact Tympanic Membrane H B Tawse —p 231
Scarlet Fever with Otitis Media H R Souper —p 233

Function of Aural Cerumen —The data given by Creed and Negus point to the lack of any definite association between accumulations of cerumen and middle ear disease, and the absence of any typical distribution would indicate that it has no important function in man, and that an increase or diminution in its amount, or changes in its consistency, cannot be taken as an indication of the condition of the middle ear In otosclerosis, however, it has frequently been observed that there is marked deficiency of secretion of cerumen It is evident from the results of the examinations made that aural cerumen is most decidedly not bactericidal, but that, on the contrary, it serves as a medium in which organisms of great variety may multiply; this is proved by the fact that bacteria were found to be more numerous in specimens of cerumen that had been collecting in the meatus for a considerable time than in those of recent origin Therefore, it would appear that the only useful function cerumen can serve is to prevent mechanically the entrance of dust and insects to the deep meatus

Journal of State Medicine, London

31 187 248 (April) 1926

*Prevention and Arrest of Diphtheria J D Rolleston —p 187
Bronchomycoses A Castellani —p 202
Milk Standards in Tropics R J Blackham —p 217
Bacteriologic Diagnosis Responsibility of Local Authorities G E Oates —p 223
Artificial Sunlight and Infant Welfare Work J M C Maxwell —p 230

Prevention of Diphtheria —Rolleston shows that the incidence of diphtheria within recent years has been showing a tendency to increase in London in comparison with New York, where there has of late been a remarkable decline in the prevalence of the disease After a brief outline of the causation of diphtheria showing the chief factors in its spread, Rolleston points out that, apart from general measures such as isolation and disinfection, the chief methods of prevention of diphtheria are determination by the Schick test of those who are susceptible to the disease and their immunization, either passively by injection of antitoxin or actively by toxin-antitoxin or anatoxin Each of these methods of immunization may have certain drawbacks, but there is no doubt that more complete and permanent results are to be obtained from the use of active immunization

Journal of Tropical Medicine and Hygiene, London

29 101 116 (April 1) 1926

*Ankylostomiasis Comparative Efficiency of Carbon Tetrachloride, Chenopodium and Thymol in Treatment C Manalang —p 101
*Subacute Inguinal Poradenitis or Climatic Bubo E P de Bellard —p 113

Treatment of Ankylostomiasis —Manalang's report deals with the results obtained from carbon tetrachloride, chenopodium and thymol used against hookworm All the way through carbon tetrachloride was superior to the other drugs Carbon tetrachloride in doses of 1 cc per 5 5 Kg, 7 Kg and 10 Kg of body weight, and mixed with magnesium sulphate cured 55, 52 34 and 53 per cent, respectively; chenopodium 40 per cent, thymol, 26 3 per cent, with the first treatments, and 73 75 61, 67, 33 and 20 per cent, respectively, with the second treatments The only objection to carbon tetrachloride noticed was that it produced dizziness, vomiting and a varying degree of debilitation These symptoms, however, are practically nil when the drug is given in doses of 1 cc to 10 Kg body weight and in combination with magnesium sulphate The carbon tetrachloride must be repurified to be safe Ill effects were not noted with either chenopodium or with thymol

Subacute Inguinal Poradenitis —Subacute inguinal poradenitis is described by de Bellard as an autonomous pathologic entity of unknown causation distinct from all the other usual forms of adenitis but very closely resembling pathologically a tuberculous adenopathy In the tropics, the disease attacks almost exclusively young men of the white race recently arrived from colder climates It is endemic in certain zones, with occasional mildly epidemic exacerbations These outbreaks seem to coincide with long periods of drought and extreme heat A long prepuce and uncleanliness of the genitals strongly predispose to it The disease is manifested by an adenitis of the inguinocrural glands, characterized by multiple intraganglionar purulent foci accompanied by periadenitic inflammatory lesions, of a hemorrhagic and suppurative type, with the formation of dense and extensive periglandular adhesions All nonsurgical treatments so far tried have failed to produce uniformly satisfactory results, besides entailing serious loss of time Poradenectomy, or the radical excision of all diseased glands, should be the treatment of election and constitutes the only procedure that promises a quick recovery

Medical Journal of Australia, Sydney

1: 343-372 (March 27) 1926

Insanity. W. A. T. Lind.—p. 343.
Diagnosis and Management of Persistent Occipitoposterior Presentations. F. B. Craig.—p. 352.
*Use of Hydrochloric Acid and Sodium Bicarbonate in Treatment of Certain Common Dyspepsias. F. L. Apperly.—p. 354.

Hydrochloric Acid and Sodium Bicarbonate in Dyspepsias.—Apperly says that before the intestine will accept chyme from the stomach, it must be of a certain salt strength or osmotic value. Any value above or below this causes rejection by the intestine of the food back into the stomach, where it remains until such time as it has by the addition of secreted hydrochloric acid or of sodium chloride or by dilution obtained the correct salt strength. The stomach then empties. The value to which chyme must attain is a constant for each individual, but varies in different individuals from 80 degrees to 130 degrees; that is, about isotonic with sodium chloride in blood (100 degrees equals one-tenth molar solution). When the strength of sodium chloride or acid in the various secretions is low, there is difficulty and delay in the attainment of the required salt value of the food. This results in increased and prolonged regurgitation of duodenal fluids, with, in consequence, lowered acidity and prolonged evacuation time. The administration of hydrochloric acid, sodium bicarbonate or sodium chloride has the effect of raising the salt strength of the food more rapidly to its required value, with the result that regurgitation of duodenal fluids is diminished, acidity is raised and the stomach empties more rapidly. The accommodation of the volume of gastric contents to gastric tonus is thus more rapidly made with relief of symptoms.

1: 373-398 (April 3) 1926

Insanity. W. A. T. Lind.—p. 373.
Relation of Dentistry to Medicine. H. T. J. Edwards.—p. 382.
Dental Radiography. H. C. Nott.—p. 384.
*Hematuria in New-Born Child. N. Dale.—p. 385.

Hematuria in New-Born Child.—Dale reports a case of hematuria, occurring in a child, aged 3 days. During the duration of the hematuria (three days) the infant manifested no signs or symptoms of renal colic and was in good condition throughout. One other interesting feature was the presence of small subungual hemorrhages on four of the fingers of the left hand. The family history was apparently clear. A Wassermann test of the mother's blood was negative.

South African Medical Journal, Johannesburg

21: 205-230 (March) 1926

Pharmacology: Past and Present. J. M. Watt.—p. 206.
Syphilis in Natives. H. J. E. Schultz.—p. 209.
Venereal Diseases in South Africa. F. A. Mitchell.—p. 210.
Conservative Treatment in Gynecology. D. H. Wessels.—p. 213.
Modern Gynecology; Recent Advances in Obstetrics and Gynecology. A. W. Bourne.—p. 217.
Bilharziasis. C. G. Kay-Sharp.—p. 218.
Organization of Medical Profession in South Africa. A. Cox.—p. 220.

South African Medical Record, Cape Town

24: 121-144 (March 27) 1926

General Paralysis of Insane: Treatment. E. W. D. Swift.—p. 122.
Ocular Affections in Neurosyphilis. J. S. du Toit.—p. 125.
Blood Pressure. C. D. Roberts.—p. 127.
Common Affections of Hip-Joint. J. O'B. Hodnett.—p. 130.
Melanosarcoma of Choroid. F. H. Robinson.—p. 132.
Work of Mental Hospital. H. E. Brown.—p. 132.
Meckel's Diverticulum with Persistent Urachus: Case. W. H. Davey.—p. 134.
Case of Puerperal Hematoma. R. D. Osler.—p. 135.

24: 145-168 (April 10) 1926

Treatment of Gonorrheal Infections by Diathermy. H. Gluckman.—p. 146.
Case of Submaxillary Calculus. R. D. Osler.—p. 154.
*Abnormally Large "Axillary Tail" of Breast. C. H. Fouche.—p. 154.
Analysis of Sleep. S. J. Fox.—p. 155.

Axillary "Tail" of Breast.—The "axillary tail" of Spence consists of an extension of functioning breast tissue from the upper lateral quadrant of the breast along the lower and outer margin of the pectoralis major into the axilla. Fouche reports one case.

Annales de Médecine, Paris

19: 241-328 (March) 1926

Abnormal Temperature and Antipyretics. L. Bard.—p. 241.
Forms of Jaundice. A. Landau and J. Held.—p. 264.
Brain Changes with Anemia. S. Draganesco.—p. 280.
Malaria in Pregnancy. G. Delamare.—p. 289.
*Etiology of Mumps. Y. Kermorgant.—p. 301.
Recklinghausen's Bone Disease. G. Guillain et al.—p. 313.

Etiology of Mumps.—Kermorgant experimented with the sediment from centrifugation of the weak salt solution used for mouth rinsing, at the onset of mumps. A dose of 0.1 cc. was injected into the parotid gland or duct of monkeys. From seven to twelve days later the animals developed bilateral parotitis; one presented multiple localizations of an infectious process resembling mumps. The centrifuged sediment cultivated in diluted horse serum revealed the presence of a special spirochete, associated with a bacterium. While separate cultures of this bacterium could be easily obtained, it was impossible to isolate the spirochete. Three monkeys were injected in the parotid or testicle with cultures of the associated bacterium and spirochete. One developed bilateral parotitis; another mumps with bilateral orchitis; the third a bilateral orchitis. The inoculations were also positive in rabbits. Cultures of the isolated bacterium injected alone gave negative results. When whole cultures were passed through a filter, thus withholding the bacteria, there was no growth of the spirochete in the filtrate, until a trace of the bacteria culture was added. Serums from subjects with a history of mumps displayed a lytic and agglutinating action on the spirochete. There was no agglutination of the associated bacteria. The spirochete presents a shiny cylindric body, spirally coiled, with a flagellum at the end. Reproduction is by division. Separated granules on a flagellum are found in the filtrate, where they may give origin to the typical spirochetes. On neo-arsphenamine treatment of the experimental mumps, the orchitis subsided immediately.

Bulletin de l'Académie de Médecine, Paris

95: 383-398 (April 20) 1926

Scopolamine in Parkinsonian Conditions. Polonovski et al.—p. 387.
Gland Swelling and False Phlegmon from Influenza. Rousseau-Saint-Philippe.—p. 391.
*Ultraviolet Rays and Growth. M. Springer and A. Tardieu.—p. 394.

Action of Ultraviolet Rays on Growth.—Springer and Tardieu conducted their experiments on young rabbits which were born and kept further in a dark cellar. While the two strongest and best developed served for controls, the three weaker were treated with ultraviolet rays. Three exposures a week, to a total of fourteen, were given with gradually increasing doses. The skin of the exposed rabbits had not been shaved. The five animals were equally and properly fed. All the treated rabbits grew normally and gained in weight. On the contrary, the weight of the controls became gradually reduced; they finally developed paralysis and died. There were no signs of rickets. They theorize that the formation of ozone, enhanced production of electricity in the organism, as well as the rise of osmotic pressure, explain the favorable action from ultraviolet rays. These rays seem to stimulate the trophic centers and the functioning of the endocrine glands and, consequently, nutrition and growth.

95: 399-424 (April 27) 1926

*Perforation of the Aorta. M. Couto.—p. 406.
*Serodiagnosis of Cancer. H. Hartmann.—p. 412.
Filtrable Virus and Heredity in Tuberculosis. F. Arloing and A. Dufourt.—p. 416.
*Rôle of Water in Acid-Base Balance. S. Ramos.—p. 420.

Syndrome of Perforation of the Aorta.—Couto reports three cases of perforation of the aorta, communicating with the pulmonary artery, which were clinically diagnosed. The symptoms suggesting the diagnosis were the instantaneous appearance of dyspnea, distress, cyanosis and pain in the chest, with a systolic murmur and aortic thrill. This combination presents the pathognomonic picture of perforation of the aorta. Localization of the murmur and thrill to the left of the sternum points to a communication with the pulmonary artery, or exceptionally with the right auricle or ventricle. Localization on the right of the sternum indicates communication with the innominate vein or superior cava.

Serodiagnosis of Cancer —Hartmann describes an improved technic for the Botelho seroreaction in malignant disease The protein content of the serum has to be brought to a standard figure, 7 or 8 per cent, diluting or concentrating it Then 0 5 cc of the serum is mixed with 3 cc of a 1 per cent solution of nitric acid in 0 75 per cent sodium chloride solution On the light foam which forms on agitation, he drips 0 5 cc of a solution of 1 Gm of iodine and 2 Gm of potassium iodide in 210 Gm of water The test is negative if the content remains clear, positive, if it becomes turbid In 145 patients with cancer the reaction was positive in 90 4 per cent, in fifty-five patients with other diseases it was negative in 85 5 per cent The reaction was positive in women in the first months of pregnancy In seventeen subjects operated on for cancer the reaction remained positive in twelve, and the cancer recurred in all in this group In five, the test became negative after the intervention, and recurrence was observed in only one The reaction became negative in six of twenty-one cancer patients after roentgen-ray or radium therapy, all appeared clinically cured In fifteen, the reaction continued positive, and all except one developed recurrences The reaction was positive in all the rabbits with tar cancer and it was negative in normal animals except in one gravid rabbit

The Importance of Water for the Acid-Base Balance of the Blood —Solano Ramos warns that loss of water in purging, vomiting and hemorrhage is responsible for many disturbances ascribed to other causes at operations The law of Arrhenius explains the acidosis in these conditions as the result of dehydration

Bulletins de la Société Médicale des Hôpitaux, Paris

50 579 617 (April 16) 1926

Vital Respiratory Capacity L Binet —p 579
Kermorgant's Theory of Mumps C Zoeller —p 582
*Phenols in Infants Urine R Debre et al —p 586
Research on Hemoglobinuria Emile Weil and Stieffel —p 587
Puerperal Septicemia from the Perfringens P Teissier et al —p 596
*Mediastinal Hernia L Bernard et al —p 602
*Hyperglycemia Without Glycosuria F Rathery and Froment —p 609
Masked Forms of Amebiasis Trabaud —p 614

Urine Phenols in Infants —Debre Goiffon and Crama noted an increase of the urine phenols from an average of 0 008 to 0 024 per cent in infants with digestive disturbances The phenol content returned to normal with recovery, or rose still higher when the condition grew worse Increase of phenols occurred also in acute infectious diseases, as bronchopneumonia, otitis, or with suppurations, as pyodermitis, without coexistence of digestive disturbances The phenols eliminated by the urine seem to be a better index of the intensity of intestinal putrefaction than the elimination of indol or skatol

Mediastinal Hernia Complicating Artificial Pneumothorax —In Bernard, Valtis and Farret's three cases, the mediastinal hernia was caused by insufflation of excessive amounts The weak points of the mediastinum yielded under the high gas pressure in the pleural cavity The hernia occurred from two to six months or three years after the beginning of the pneumothorax treatment The ages ranged from 17 to 25 In these three cases, the hernia was in the left pleura, and projected on the right side The hernia subsided with longer intervals and less pressure The hernia did not impede the favorable course of the artificial pneumothorax

Hyperglycemia Without Glycosuria —Rathery and Froment found an excess of blood sugar, without glycosuria, in subjects with skin and joint affections, and with disease of the kidney, liver or biliary tract They observed this also in four cases of obesity, in one of postencephalitic parkinsonism, the adiposogenital syndrome, and cancer of the vertebrae The hyperglycemia without glycosuria does not seem to be connected with functional disturbances of the kidney as in nephritis It is apparently entailed by some disturbance in carbohydrate metabolism, pointing to a prediabetic condition

50 619 681 (April 23) 1926

*Epinephrine Treatment of Asthma Pagniez and Escalier —p 619
Glycemia in Skin Diseases Lortat Jacob and P Bourgeois —p 621
Epidemic Encephalitis Simulating Dementia Praecox Laignel Lavastine and R Valence —p 623
Hernia of Muscle in Tabes Idem —p 627
*Sympathectomy for Arteritis A Cain and Hamburger —p 629
Acquired Displacement of the Heart Monier Vinard and A Alibert —p 633
Morbid Conditions with Hypobilirubinemia Landau and Held —p 637
Lesions of Pulmonary Artery with Mitral Stenosis C Laubry and M Thomas —p 639
*Anaphylaxis and Acid Base Balance J Parisot et al —p 647.
*Etiology of Rheumatic Mitral Stenosis P Merklen and Schneider —p 650
Serum Plus Vaccine in Bronchopneumonia d'Oelsnitz —p 654
Hyperglycemia Without Glycosuria in Skin Diseases L Hudelo and R Kourilsky —p 662
Therapeutic Pneumothorax in Children P Armand Delille et al —p 667
Purified Diphtheria Antitoxin J Comby —p 670
*Death from Fixation Abscess J Comby —p 678
Nephritic Pericarditis and Acidosis in a Diabetic C Oddo and J Zuccarelli —p 679

Prolonged Use of Epinephrine in Asthma —A remarkable tolerance for epinephrine was manifest in Pagniez and Escalier's tabetic patient with asthma The paroxysms, as frequent as four a day, could not be relieved otherwise than with injections of epinephrine The woman had been given 2 172 injections, of 0 0005 Gm each, within eighteen months The total of epinephrine injected in 1924 amounted to 0 696 Gm The injections appeared to be without influence on the blood pressure, but were probably responsible for other phenomena such as paleness, accelerated pulse and palpitations Finally a few grave syncopes occurred, and the injections were discontinued Evidently not the blood pressure alone, but other signs may serve as the criterion of the tolerance for epinephrine

Sympathectomy for Arteritis Obliterans —Cain and Hamburger report a case of periarterial sympathectomy on the brachial artery to relieve arteritis obliterans in the right hand The usual remedies as well as antisyphilitic treatment had been without avail The intolerable pain subsided completely two days after the operation, the aspect of the hand changing gradually to normal Three weeks later the woman was able to begin to use the hand They add that the interval since the operation is only one month

Alimentary Anaphylaxis and Acid-Base Balance.—Parisot, Simonin and Verain observed a case of intolerance for milk, eggs and peas in a woman, aged 30 Ingestion of a minimal portion of any of these substances induced, among other phenomena, urticaria, nausea, diarrhea, headache and fever (the woman was tuberculous) Examination of the acid-base balance revealed a low *pн* and reduced alkali reserve A mixture of equal parts of sodium bicarbonate and citrate was given by mouth in a daily dose of from 15 to 30 Gm, in water The alkali reserve rose from 42 to 63 per cent (by volume) in ten days Then every day one of the previously nontolerated substances was given, and no anaphylactic manifestations were noted Since then the woman eats freely of the long forbidden foods

Rheumatism in Etiology of Mitral Stenosis —Merklen and Schneider draw their conclusions from thirty-two cases of rheumatic mitral stenosis The disease occurs chiefly in women and is frequently associated with dystrophic conditions This suggests that the female endocrine glands present a favorable ground for the development of stenosis, especially if there is any disturbance The rheumatic virus seems to affect first the thyroid, which seems to be more vulnerable in women than in men Consecutively other glands are involved, thus inducing humoral and dystrophic changes responsible for the mitral stenosis

Death from Fixation Abscess —Comby cites a case in which death was apparently caused by a fixation abscess This occurred in South America, where the fixation abscess was applied for treatment of dementia praecox, in a boy, aged 14 It is possible that too large a dose of turpentine (2 cc instead of the usual 1 cc) may be incriminated for the tissue necrosis and consecutive fatal hematoma

Comptes Rendus de la Société de Biologie, Paris

94 361 420 (Feb 19) 1926 Partial Index

Herpes Virus in Human Organism P Teissier et al —p 377
*Cheyne Stokes Respiration V Pachon and P Delmas Marsalet —p 391.
Vitality of Spermatozoa in Syphilitics Bertin and Breton —p 397
*Role of Calcium in Bacteriophagy J Bordet —p 403
Significance of Carotid Gland H de Winiwarter —p 407
Iso Antibodies in Maternal and Placental Blood Collon —p 418

Cheyne-Stokes Respiration in a Decerebrate Dog.—Pachon and Delmas-Marsalet divided the crura cerebri in a chloralosed dog. The corpora quadrigemina were left intact. The animal was then placed in a thermostat; it developed Cheyne-Stokes respiration analogous to that in man, for over two hours. Obviously the posterior corpora quadrigemina do not share in the occurrence of Cheyne-Stokes respiration; it is essentially a phenomenon from insufficiency of the brain.

Rôle of Calcium Salts in Transmissible Microbic Autolysis.—To test tubes containing 5 cc. of an alkalized bouillon, was added one drop of a 1 per cent solution of calcium chloride or fifteen drops of 1 per cent sodium oxalate. Bordet used for the experiments dysentery bacillus bacteriophage element (A) or a bacteriophage obtained from the action of a lysogenic colon bacillus on the dysentery bacillus element (L). Two drops of one element were introduced in each of the calcium or oxalate tubes. The tubes with the A element were inoculated with colon or dysentery bacilli. Lysis was manifest in the tubes with oxalate or calcium, in the presence of the A element, while with the L element, microbic lysis occurred only in the tubes with calcium. The L element in the oxalated bouillon seemed to be deprived not only of the lytic property but also of the power of regeneration. On the other hand, the regeneration of the A element occurred in both the oxalate and the calcium bouillon. The regenerating power was still retained after numerous passages in oxalate bouillon inoculated with the sensitive microbe. Regeneration of the L element and its lytic action in calcium bouillon did not seem to be impaired by previous contact with sodium oxalate.

Gynécologie et Obstétrique, Paris

13: 241-320 (April) 1926

Fixation of Uterus by Ligamentopexy. Cotte and Peycelon.—p. 241.
*Adenoma of Uterine Cervix. E. Douay and A. Soïmaru.—p. 245.
Malformations of Lower Part of Body. M. S. Serdukoff.—p. 264.
Pituitary Extract. E. A. R. de Cotret.—p. 276.

Adenoma of Uterine Cervix.—Douay and Soïmaru have treated forty cases of adenoma of the cervix within three years. The affection was most frequent between the ages of 30 and 50; one patient was 72 years old. The adenoma may be localized, and present a vegetating, polypous or cystic form. A diffuse adenoma, occupying the whole of the cervix was noted in 78 per cent of the cases. Under the influence of caustics or the galvanocautery, the adenoma may develop into epithelioma, especially the vegetating form, unless the destruction has been complete. Amputation of the cervix apparently induces a definite cure.

Journal de Chirurgie, Paris

27: 241-384 (March) 1926

*Tuberculosis of the Knee. P. Fredet.—p. 241.
Strictures of Inflammatory Origin in the Rectum. Radice.—p. 260.

Technic for Resection of Tuberculous Knee.—Fredet gives an illustrated description of his method for extracapsular resection as applied in twenty-seven patients, aged from 17 to 61. All, except two, seemed clinically cured; there was consolidation of the bones in three months, with restoration of function. Roentgenograms showed perfect union of the bones. Some of those thus treated were able to resume hard manual work. There was no operative mortality.

Marseille Médical

63: 545-600 (April 5) 1926. Partial Index

Radium and Surgery in Cancer of the Uterus. G. Bonnal.—p. 545.
*Case of Fibrinuria. E. Chauvin.—p. 561.
Dementia Praecox and Mental Confusion with Pulmonary Tuberculosis Wahl.—p. 566.
Meningeal Hemorrhage with Anthrax Septicemia. Rouslacroix and F. Trabuc.—p. 574.
Malignant Edema Contracted at Necropsy. F. Trabuc.—p. 581.

Fibrinuria with Cancer of the Kidney.—The urine of Chauvin's patient coagulated to such an extent that it clung to the receptacle when it was turned upside down. The phenomenon occurred repeatedly, without association of any characteristic symptoms. Examination confirmed the fibrinous nature of the urine clots. At the operation, the kidney cancer was found partly covered by successive layers of clotted urine. Fibrinuria is usually considered a symptom of bladder origin, but in this case the kidney was responsible for it.

Paris Médical

59: 385-404 (April 24) 1926

Inaugural Lecture of Pathology Course. Rathery.—p. 385.
*Strophulus. P. Vallery-Radot and P. Blamoutier.—p. 398.
Oxygen Treatment of Whooping Cough. G. Boeldieu.—p. 401.

Peptone Treatment of Strophulus.—Pasteur Vallery-Radot and Blamoutier used peptone desensitization treatment with excellent results in twenty children, aged from 1 to 4, with this papular eruption. The action was immediate in sixteen, retarded in four. The most rapid and durable effect was apparently induced with a preparation of meat and fish peptones mixed with egg and milk extracts. A teaspoonful was given an hour before each meal. Children under 3 years were fed four times a day, the older only three times. A suitable diet was strictly observed, avoiding substances liable to induce the rash, especially eggs. The peptone was given for ten days, the series repeated at five day intervals or longer, until a month after the last papule had disappeared. The treatment was continued for months to prevent fresh outbreaks of the rash. The children were reexamined from a month to a year later; no instance of recurrence was found.

Presse Médicale, Paris

34: 465-480 (April 14) 1926

*Nitrous Oxide Anesthesia. E. Desmarest.—p. 465.
Mineral Water Treatment of Asthma. J. Galup.—p. 466.
Fluorosis or Fluorin Cachexia. H. Cristiani.—p. 469.
Oxalic Acid in Cerebrospinal Fluid. M. Nathan.—p. 471.

Nitrous Oxide Anesthesia.—In Desmarest's opinion, nitrous oxide is especially advised in exhausted, infected or anemic patients, when chloroform or ether is contraindicated. Owing to the hypertension-inducing effect nitrous oxide maintains the heart action and is, therefore, useful in prolonged operations. It was never followed by postoperative acidosis in his diabetic patients. It is the best anesthetic for minor operations, in reduction of dislocations, and painful dressings. It seems to be more effectual and less dangerous than ethyl chloride. No complications on the part of the lung, liver or kidney were ever observed.

34: 481-496 (April 17) 1926

*Sanocrysin Treatment. L. Bernard.—p. 481.
Anatoxin Immunization Against Tetanus. Zoeller and Ramon.—p. 485.
Homo-Organic Hormones in Man. C. Richet, Jr.—p. 486.
Marvels of the Bird Wing. Chapeaux and Servajean.—p. 491.

Sanocrysin in Pulmonary Tuberculosis.—Bernard treated twenty-six tuberculous patients with sanocrysin for a few months. The gold salt solution was injected intravenously (0.25 Gm. to 1 Gm.). A total of 10 or 12 Gm. was never surpassed. Favorable results, obviously due to the treatment, were noted in six men and three women; favorable results in which, besides the sanocrysin, other factors might have been responsible, were noted in eight men. The action was null in four men and three women, and unfavorable in two men, causing death in one. The treatment appeared most effectual in the ulcerative form of tuberculosis, with cheesy degeneration and an acute course. The effect was insignificant in the chronic form. The conclusion is that sanocrysin *does not seem to have a specific action on pulmonary* tuberculosis.

34: 497-512 (April 21) 1926

Arsenicals by the Mouth in Amebiasis, etc. P. Ravaut.—p. 497.
Deep Roentgenotherapy in Cancer of the Breast. C. Chambacher and W. Rieder.—p. 499.
Some of the New Liver Function Tests. J. Rouillard.—p. 501.
Institutional Treatment of Surgical Tuberculosis in Adults. Duguet and Clavelin.—p. 507.

34: 513-528 (April 24) 1926

Inaugural Lecture of Course on Medical Physics. Strohl.—p. 513.
*Bilateral Artificial Pneumothorax. F. Tobé and J. Terrasse.—p. 518.
Depopulation of the Marquesas Islands. L. Rollin.—p. 523.

Simultaneous Bilateral Artificial Pneumothorax.—The possibility of a complication of bilateral artificial pneumothorax *by perforation of the lung should always be borne in mind.*

The danger may be avoided, Tobé and Terrasse say, if the first pneumothorax is elective, prolonging the intervals between the insufflations and keeping the amounts small The bilateral pneumothorax failed in one of their cases on account of pleural adhesions, in another case it was well tolerated for a year, until the patient died from old laryngeal lesions In three cases, of seven, eight and ten months' standing, the results to date are similar to that from unilateral pneumothorax

Policlinico, Rome

33 577 611 (April 26) 1926

Meningism from Cocaine L Tonelli —p 577
Raynaud's Disease P Dal Maso —p 581
Mercury as a Diuretic V Debenedetti —p 585

33 165 220 (April 15) 1926 Surgical Section

Kidney Function Tests A Cassuto —p 165 C td
Tumor of Tunica Vaginalis R Micotti —p 185
The Megaesophagus S G Giardina —p 200

Riforma Medica, Naples

42 • 337 360 (April 12) 1926

Otorhinolaryngology in Peace and War G Bilancioni —p 337
*Skin Reactions F Flarer —p 346
Endocrine Therapy E Aievoli —p 351

Skin Reactions—Flarer compared in tuberculous children the reaction to tuberculin and to cutaneous application of a formaldehyde solution and of oil of turpentine He agrees with those who assume an increased irritability of the tissues of tuberculous subjects to nonspecific substances, as well as to tuberculin

42 361 384 (April 19) 1926

Inguinal Hernia D Giordano —p 361
Pathogenesis of Angiocholecystitis G Pansini —p 363
*Protein Treatment in Syphilis A Catalano —p 369
Medicolegal Institute R Magnanimi —p 378
Maragliano's Tuberculosis Vaccine E Curti —p 380

Protein Treatment in Syphilis—Catalano injected intramuscularly at five day intervals from 5 to 10 cc of boiled milk in general paresis and tabes Besides this he used bismuth He failed in three cases of tabes, but had fine results in five out of eleven general paralysis patients

Archivos Españoles de Pediatría, Madrid

10 • 129 192 (March) 1926

*Pylorostenosis in Infants J Estella y B de Castro —p 129
*Habitual Vomiting of Infants R Garelly —p 145
*Pathogenesis of Pylorospasm Damaso Rodrigo —p 165
Multiple Malformations in New Born Infant of Syphilitic Father F Carajas —p 172

Dietetic Treatment of Pylorostenosis in Infants—Estella concludes from his extensive study of pylorostenosis in infants that there are no certain signs for differentiation of the organic and functional forms, and consequently, medical measures should be given a thorough trial first The indication for operation depends on the symptoms, clinical course, radiologic, digestive and trophic findings without being misled by published statistics Thick cereal owes its efficacy not only to its consistence but to the abundance of carbohydrates and the lack of fats

Habitual Vomiting in Infants—Garelly states that 25 1 per cent of 442 infants examined vomited more or less regularly after nursing, from some unknown cause If the peristolic functioning seems excessive, while the milk coagulates abnormally slowly, treatment should aim to promote coagulation, there is less tendency to vomit when the stomach contents are of a thick consistency Condensed milk might be given a trial, and alkalis with excessive acidity Sodium citrate has the advantage that it retards coagulation of the milk and allows better penetration by the digestive juices while neutralizing the irritating acid Danielopolu has demonstrated that drugs which act on the involuntary nervous system affect the vagus or the sympathetic according as the dose is large or small Holding the child erect promotes expulsion of gases As most of these children are gaining in weight, and as the vomiting often ceases spontaneously, it must be regarded as merely an exaggeration of a physiologic process

Pathogenesis of Pylorospasm—Damaso Rodrigo comments on the variability of the causes which may induce pylorospasm In a case of habitual vomiting described, spasmophilia and vagotony could be excluded and the symptoms subsided at once when a teaspoonful of a 10 per cent solution of bismuth carbonate in an acacia solution was given immediately before and after feeding This treatment was suggested by the observation that the infant, who had been vomiting regularly almost from birth, did not vomit the contrast barium suspension, given for roentgenoscopy.

Archivos Latino-Amer. de Pediatría, Buenos Aires

20 • 1 77 (Jan) 1926

*Myoclonia E Portu Pereyra and J M Estape —p 1
*Cephaloplegia A Carrau —p 11
A Case of Dermatomyositis J Bonaba —p 15
Protection for Mothers and for Children G Araoz Alfaro —p 21.
*Case of Essential Meningeal Hemorrhage J A Bauza —p 38
*Meningitis of Obscure Etiology Alice Armand Ugon —p 43
Congenital Myatonia A Carrau and Penco —p 51

Myoclonia—In two of the four cases described, the myoclonus was probably due to epidemic encephalitis as there were hundreds of cases of epidemic hiccup in town at the time and many cases of epidemic encephalitis developed afterward In both these children the clonic spasms subsided during sleep, and the cure was complete in eighteen or fifty-six days, under psychotherapy The clonic spasms became more pronounced when the child was excited In another case the myoclonia was traceable to birth injury, which had entailed paresis of the right arm and torticollis, in the fourth, to a convulsion at the age of 2 after which the myoclonus had developed and progressed The clonic spasms occurred in paroxysms, especially severe after excitement The cerebrospinal fluid was normal in these two chronic cases Myoclonia seems to be a striatal affection (hemorrhage, softening) for which various morbid causes may be responsible

Cephaloplegic Form of Anterior Poliomyelitis.—Carrau recalls that diphtheria as well as infantile paralysis may be responsible for the sudden cephaloplegia, with loss of tendon reflexes and spontaneous recovery in five to twelve days, to which Figueira called attention first He was unable to demonstrate conclusively the connection with acute poliomyelitis as the children showed no other symptoms Carrau here provides the missing link, as the child presented the typical cephaloplegia [illegible] ccompanied by symptoms of unmistakable poliom[illegible] which ran a long course with a final trend to rec[illegible]

[illegible] Hemorrhage of Unknown Cause.—Bauzá's [illegible] was a girl approaching puberty who suddenly [illegible]ped symptoms of spontaneous subarachnoid hemorrhage [illegible] favorable course without sequelae, suggests that it was of essential nature, possibly an attempt at vicarious menstruation as a drop of blood was found on the body linen the tenth day.

Meningitis—In two of the three cases described the symptoms indicated epidemic meningitis but no meningococci could be detected The children aged 3 and 5, recovered under serotherapy In the third case the clinical picture was that of tuberculous meningitis, but the child recovered in six weeks and inoculation of animals was negative The bacteriologic findings in all three had been constantly negative

Brazil-Medico, Rio de Janeiro

1: 81 94 (Feb 13) 1926

*The Oculocardiac Reflex in Surgery Americo Valerio —p 81
Survey of Recent French Literature Desaux and Trelard —p 88

The Oculocardiac Reflex in Surgery.—Valerio urges testing the sympathetic nervous system before general anesthesia, as a routine practice With a positive oculocardiac reflex, chloroform should be avoided, he says and ether should be preceded by atropine With exaggeration of the reflex, inhalation anesthesia should not be attempted With inverted oculocardiac reflex, the prognosis is relatively favorable, but if the reflex is abolished, the prognosis is grave

1 95 110 (Feb 20) 1926

*Treatment of Epitheliomas of the Skin Cassio de Rezende —p 95
*Thrombosis of the Heart M Torres —p 100 C cn

Caustic Treatment of Epitheliomas of the Skin.—De Rezende's arsenic paste has proved its efficacy *in nearly ten* years' experience It does not compete with radiotherapy, but when the latter is not available, the intense inflammatory reaction to the daily application of the paste destroys the lesions down into the subcutaneous tissue. The photographs reproduced confirm the complete cure, one in a man of 80. The vehicle is resin cerate, 10 Gm., to which are added 0.25 Gm. each of arsenious acid and copper sulphate; 0.5 Gm. of antimony and potassium tartrate and 0.75 Gm. of quinine, with 1 Gm. each of antipyrine, phenol crystals, camphor, chloral and menthol. He ascribes the rapid healing of the lesion after suspension of the applications to the intense edematous reaction in the tissues around. In the cases mentioned, three applications completed the course in three weeks or a month.

Thrombosis of the Heart.—Torres concludes his long study of endocarditis with vegetations in the heart wall. He says that it is comparatively common in Rio in patients with grave cardiac insufficiency. Seven cases are described with necropsy examination. The valves were free from recent inflammatory changes. The thrombi adhere to the parietal endocardium, and there is always infarction of the lungs, kidneys, brain and spleen. There is usually no history of acute articular rheumatism. He proposes the term endocarditis muralis for this afebrile variety of endocarditis.

Revista de la Soc. de Urología, Santiago

1: 3-66 (Oct.) 1925

Syphilitic Disease of Right Testicle and Cord. A. Lois.—p. 3.
Influenzal Epididymitis. A. Lois.—p. 5.
Genito-Urinary Tuberculosis. A. Valenzuela.—p. 7.
Ureteropyelonephritis. J. Billard.—p. 10.
Infiltrated Neoplasm of the Bladder. E. Ibarra Loring.—p. 15.
Mercurial and Oxalic Poisoning. G. Ahumada.—p. 18.
Later History in Case of Renal Tuberculosis. W. Sommer.—p. 21.
*Correction of Floating Kidney. J. L. Bisquertt C.—p. 23.
*Gonococcal Spondylitis. W. E. Coutts.—p. 26.
Hydronephrosis from Compression of Ureter. R. Baltra.—p. 30.
Tuberculous Pyonephrosis. J. L. Bisquertt C.—p. 32.
*Complications of Mumps. W. E. Coutts and H. Vicuña.—p. 36.
Bilateral Renal Tuberculosis. C. Aguirre.—p. 43.
Gonococcal Arthritis. I. Díaz Muñoz.—p. 46.
Albuminuric Retinitis. C. Lobo Onell.—p. 49.
Classification of Nephritis. H. Chabanier.—p. 55.
Gonococcal Ophthalmia. Espildora Luque.—p. 60.

Nephropexy.—Bisquertt suspended the floating right kidney in the case described with a strip of fascia lata. The strip was 1½ cm. wide and was passed under a bridge cut for it in the front and rear of the capsule at the superior pole; with this the kidney was suspended from the lowest rib. He has been applying this technic for several years and always with gratifying results.

Gonococcus Spondylitis.—Coutts attributed the vertebral disturbances to the gonococcus by exclusion, the man having contracted gonorrhea within the year. An intense focal reaction followed an intradermal injection of a gonococcus vaccine (700 millions of living gonococci and three days later, 2,000 millions). The man was able to get up in two days after the last, and conditions rapidly returned to clinically normal.

Hemotherapy in Mumps.—Coutts and Vicuña report that autohemotherapy had a prompt and decided influence on the orchitis and other genito-urinary complications of mumps in a recent epidemic. One of the five young men whose cases are described had extreme congestion of the prostate in addition to orchitis and epididymitis, and retention of urine compelled catheterization. They injected 5 cc. of own blood four or five days in succession. The fever dropped at once after the first injection.

Semana Médica, Buenos Aires

1: 1-56 (Jan. 7) 1926

*Erythema Nodosum and Tuberculosis. G. Aráoz Alfaro.—p. 2.
*The Gastric Contents in Diagnosis. P. Escudero.—p. 7.
Methods to Induce Abortion and Sterilize at Same Time. D. A. Rojas.—p. 8.
Electrocardiography in Hyposphyxia. Martini and Comas.—p. 13.
Roger's Disease and Transposition of Organs. Bullrich and Del Castillo.—p. 23.
*Malaria Treatment of General Paralysis. G. Bosch and A. Mó.—p. 25.
Quackery. J. I. Iriarte.—p. 35.
Gunshot Wounds of the Liver. D. García Díaz.—p. 37.
Treatment of Hemoptysis with Tartar Emetic. O. P. Curti.—p. 38.
Vision Without Eyes. E. Vuillermoz.—p. 39.
Teluric Vibrations and Segmentation. A. Mary.—p. 41.

Erythema Nodosum.—Aráoz Alfaro asserts that erythema nodosum may be the manifestation of various infections, but tuberculosis can be incriminated in the majority. In certain cases it seems to be a primary affection representing an attenuated and masked form of tuberculosis. He has encountered another group of cases in which the erythema nodosum seemed to be the final episode in a fever continuing through several weeks in children with glandular disease and positive tuberculin test. In these cases, the erythema seemed to act like a fixation abscess, arresting the bacillary fever and materially improving the general health. One infant, 18 months old, had been having fever for two weeks and miliary tuberculosis was feared, but the discovery of a nodule on the leg suggested the possible onset of erythema nodosum, and he notified the parents that there would probably be a crop of them, with high fever, after which the child would be healthier than before. The course of the case realized his prophecy completely. In a second case of the kind the child was 2 years old, and both have been in much better health since the erythema a year and a half or two years ago.

Diagnosis of Stomach Disease.—Escudero has found the gastric contents apparently normal in certain cases of functional or organic derangement of the stomach. In 401 stomach patients examined, hypoacidity was found in 54.4 per cent of the 248 cases of functional dyspepsia and in 52.2 per cent of the 153 with organic disease; normal acidity was found in 29 and 24.1 per cent respectively, and hyperacidity in 16.5 and 23.5 per cent. Repeating the analysis gave conflicting findings in 30 per cent. There does not seem to be any definite expression of the stomach chemistry corresponding to any special type of gastropathy.

Malaria Treatment in General Paralysis.—Bosch and Mó report results surpassing anything previously realized. Of their forty patients thus treated, 17.64 per cent have been attending to business for up to two years to date; 29.41 per cent have returned to ordinary home life, and only 20.58 failed to show benefit. One in advanced cachexia died and another after an operation for appendicitis. The others are still under treatment.

Archiv für Kinderheilkunde, Stuttgart

78: 1-80 (April 16) 1926

Electric Irritability, Acidosis and Vegetative System. F. Goebel and S. Hillenberg.—p. 1.
*Milk-Free Diet. E. Hindes.—p. 9.
The Child's Testimony as Witness. U. Peiper.—p. 20.
Treatment of Congenital Syphilis. H. Knauer.—p. 32.
*The Blood in Nutritional Disturbances. A. F. Reschid.—p. 35.
Uric Acid Elimination in Infants. Steudel and Ellinghaus.—p. 41.

Milk-Free Diet.—Hindes found in Transcaucasia that a milk-free diet prevented the nutritional disturbances, occurring in summer, better than any other measures, including careful preparation and supervision of milk.

The Blood in Nutritional Disturbances.—Reschid finds the shifting of the leukocytes to the left a valuable aid in differentiating between alimentary and infectious nutritional disturbances of infants.

Archiv für die gesamte Physiologie, Berlin

212: 169-374 (March 23) 1926. Partial Index

*Influence of Coffee on Sense Acuity. R. Allers et al.—p. 183.
Connection Between Labyrinth and Tonus of Extremities. F. Arndts.—p. 204.
Technic for Esophageal Fistula. S. A. Komarow.—p. 212.
*Structure of Birds and the Flight Problem. F. Groebbels.—p. 215.
Action of Spleen and Marrow Extracts on the Blood. Kokas.—p. 229.
Migration of Substances from Blood Plasma. A. Wittgenstein and H. A. Krebs.—p. 268.
Vasodilators in Cervical Sympathetic. Feldberg and Schilf.—p. 365.

Influence of Coffee on Sense Acuity.—In 2,500 observations on three persons, Allers, Freund and Prager found that black coffee had a more or less specific influence on the visual field, the direction of the influence varying with the natural reaction of the subject. The normal tendency to exaggeration of peripherally seen movements was increased or decreased; the visual field was enlarged or contracted. One of the three subjects had the visual field contracted by 20 degrees or more outward, and by 10 degrees both in the upper and lower halves. The pulse was also extremely retarded in this case. The second subject had the visual field enlarged by 10 degrees. In the third, it was unmodified. In both the latter, the pulse was accelerated. It seems probable, though not certain, that the retina itself is the structure affected by the coffee. The tests were made with a cup of black coffee made from about thirty coffee beans.

The Structural Plan of Birds and the Flight Problem.—Groebbels weighed and measured forty-six species of birds. He found that a comparison of body weight and wing surface did not help to elucidate the problem of flying capacity, nor did the comparative weight of the muscles used in flying. The narrower the wing in comparison with its length, the greater is the flying power. In all the species examined, the anterior plus the posterior margin of the wing measured the same as the span of the wings. In the best flyers the measurements of the anterior wing margin, posterior wing margin and one-half the span of the fully expanded wings were exactly or approximately equal. In the proportion in which the posterior wing margin exceeds the anterior in length, is the flying power lessened The longer the body in comparison with the length of the outstretched wing, the less is the flying power. In those birds which utilize the wind for flight, definite relations exist between the measurements of span and contours when the wing is partially, as well as wholly, expanded. Measurements made on the winning craft in a flying contest illustrate the applicability of these laws to aircraft construction.

Archiv für Verdauungs-Krankheiten, Berlin

38: 1-142 (April) 1926

*Fructosuria. I. Snapper et al.—p 1.
Vicarious Menstruation. L Auerbach—p. 15.
Thyroid Treatment of Obesity. R. F. Weiss.—p. 26.
*Peptic Ulcer. L Jarno—p. 46.
*Endocrines and Ulcer. L Alkan.—p. 55.
Paradoxic Proctostasis. J. Schaffler—p. 79.
Diagnosis of Cancer of Intestine from Stomach Content. H. Illoway.—p. 87.
Science in Spain. J. Ma Rossell.—p. 98.

Fructosuria.—Snapper, Grünbaum and Creveld describe a case of levulosuria. The dextrose tolerance was normal. Insulin had no influence on the levulosuria.

Peptic Ulcer.—Jarno found a low concentration of cholesterol in the serum from patients with gastric ulcer.

Endocrines and Ulcer.—Alkan had good results in treatment of gastric ulcer with injections of an extract from parathyroid glands.

Deutsche medizinische Wochenschrift, Berlin

52: 649-688 (April 16) 1926

Paratyphoid. Uhlenhuth and W. Seiffert.—p. 649. C'td.
Lipoid Antibodies. H. Sachs and Klopstock.—p. 650.
*Gastric Secretion and Diuresis. W. Arnoldi and M. Schechter.—p. 651.
*Pregnancy Glycosuria. D. Adlersberg and O. Porges.—p. 653.
*Serologic Test for Cancer. K. Volkmann.—p. 655.
Kidney Disease or Appendicitis? J. Hohlbaum.—p. 657.
Lymphomas of Respiratory Passages. W. Klestadt.—p. 659.
Complications of Peritonsillitis. G. Claus.—p. 661.
Vitamins in Yeast. M. Heincke.—p. 662.
Illumination with Daylight Effect. Foerster.—p. 663.
Iron Therapy. F. Fischler.—p. 664.
Epidural Injection. H. H. Hess.—p. 666.
Genital Herpes. D. v. Pezold—p. 667.
Transportation of Patients. P. Frank.—p. 668.
"Prevention of Syphilis After Contact." J. Heller.—p. 669.
Reply. Hübner.—p. 670.
Cancer Statistics. F. Prinzing.—p. 671.
History of Syphilis. K. Dohi.—p. 672. C'tn.
Professional Tribunals. S. Alexander.—p. 673.

Gastric Secretion and Diuresis.—Arnoldi and Schechter gained the impression that subjects with hyperacidity have a larger renal excretion of water and solids and a stronger movement of the fluids and solids through the body, a stronger action of the liver and a weaker of the pancreas than normal subjects. There are analogies with diabetes, including a lowered utilization of sugar. The changes are the opposite in subacidity.

Pregnancy Glycosuria.—Adlersberg and Porges found in eight of fourteen pregnant women an increased permeability of the kidneys for dextrose. Two had a lowered sugar tolerance, resembling diabetes. After from two to five days of a diet free from carbohydrates, the experimental hyperglycemia and glycosuria were more pronounced. They suggest to use this method in tests for pregnancy.

Serologic Tests for Cancer.—Volkmann had good results with various modifications of the Abderhalden test in genital carcinomas.

52: 689-732 (April 23) 1926

Paratyphoid. Uhlenhuth and W. Seiffert.—p. 689. C'tn.
Diet in Fever. L. F. Meyer.—p. 691.
Basal Metabolism. J. Kapfhammer.—p. 694.
*Perineal Lacerations. M. Henkel.—p. 696.
Surgery of Glaucoma. P. A. Jaensch.—p. 697.
*Ectoscopy. E. Weisz.—p. 699.
Alveolar Pyorrhea. W. Praeger.—p. 700.
Treatment of Furunculosis. K. Zieler.—p. 701.
Treatment of Erysipelas. Birkholz.—p. 702.
Treatment of Leukorrhea. H. Alexander.—p. 704.
Gonorrhea in Female. Lucke.—p. 704.
Injury of Glans Penis. A. Joseph.—p. 706.
*Familial Pernicious Anemia. R. Tscherning.—p. 707.
Import of Incomplete Coating of Tongue. E. Levinger.—p. 707.
Blood in Tabetic Crises. H. Fleischhacker.—p. 708.
Dermatitis with Encephalitis. A. B. Selisky.—p. 709.
Infectious Diseases. O. Moog.—p. 709.
Inability to Attend Court. G. Strassmann.—p. 712.
"Suicide Intent as Indication for Abortion." Niedermeyer.—p. 714.
History of Syphilis. K. Dohi.—p. 714. C'cn.
The Physician and the Automobile. H. Kruspe.—p. 715.

Perineal Lacerations.—Henkel regards a timely episiotomy as the best means for prevention of rupture and prolapse. It may be sutured even on the second or third day and heals rapidly because the perineum has not been exposed to prolonged pressure, and because the wound edges are smooth.

Ectoscopy.—Weisz determines the margins of the lungs by inspection. The lower border may be seen in shallow breathing or even during the interval of respiration by the intercostal grooves. A sniffing movement makes them still more evident. No grooves are apparent in the spleen and liver region. With speaking (saying, for example, repeatedly the word kitt), the grooves bulge. This applies even when there is effusion. A point for puncture of an encapsulated empyema may be found by this symptom even if the rest of the pleura is thickened.

Familial Pernicious Anemia.—Tscherning observed pernicious anemia in three sisters.

Deutsche Zeitschrift für Chirurgie, Leipzig

195: 145-215 (April) 1926

*Involution and Disease of the Breast. A. Dietrich.—p. 145.
Nitrous Oxide General Anesthesia. W. C. Meiss.—p. 157.
*Reduction of Suprarenal Tissue in Treatment of Cancer. Stephan.—p. 170.
Experiments in Regeneration of Pituitary. Meuret and Junker.—p. 194.
*Lymph from Thoracic Duct as an Antidiabetic. W. J. Klug.—p. 210.

Involution, Fibromatosis and Cancer of the Mammary Gland.—Dietrich studied the physiologic changes in the mammary gland from infancy to senility, and points out that these changes throw light on the nature of diffuse fibromatosis with cyst formation (cystic breast, chronic cystic mastitis, cyst adenoma). The source of this condition is neither inflammation nor tumor, but a condition of chronic irritation, arising from disturbed metamorphosis. Diffuse fibromatosis is accompanied by active proliferation of connective tissue, involutional processes and proliferation of epithelium, the final stage of which is represented by tumor formation (fibroadenoma and carcinoma). The frequency of carcinoma in cases of diffuse fibromatosis coming to operation is given as 40-50 per cent.

Operative Reduction of the Suprarenal Tissue in the Treatment of Inoperable Carcinomas.—Studies on the physiology of the reticulo-endothelial system, made in Stephan's service, showed the prime importance of this system in combating invasion, whether by infection, toxins or carcinoma. Further experiments showed that the function of this system is subject to an inhibiting influence by the internal secretion of the suprarenal cortex. Stephan conceived the idea that the benefit in carcinoma cases from deep roentgen-ray treatment lay chiefly in enhancing the defensive function of the connective tissue cell and that the refractoriness of certain carcinomas to the roentgen ray depended, not on the nature of the tumor cell or on the dose, but on defective function, with inability to respond, on the part of these cells. As the reticulo-endothelial system forms a single apparatus, progress must lie in improving the functional condition of the system as a whole. From this standpoint, he removed the left suprarenal capsule from eleven patients in late stages of inoperable carcinoma, which had proved absolutely refractory to the roentgen ray. Subsequent roentgen-ray treatment was followed by a severe reaction, although the doses were much smaller than those of the previous, reactionless treatment. The only pathologic change observed in the organ removed was atrophy, of varying grades, of the cortex, limited to the outermost zone. This was present in all but one case. Stephan holds that this atrophy represents nature's effort to increase the resistance by lessening the output of the hormone which inhibits connective tissue cell function. In the case in which atrophy was absent, the course of the disease was in keeping with the nonresponse of the organ. Stephan also reports good results from partial suprarenalectomy in cases of polycythemia, and temporary results from implantation of suprarenal tissue in cases of pernicious anemia. A measure for the functional power of the reticulo-endothelial system is found in the ferment number of the proteolytic serum ferment. Extirpation of a suprarenal capsule is to be regarded as an auxiliary, not an etiotropic therapy of malignant disease. His entire material, extending over years, will shortly be published.

The Lymph from the Thoracic Duct as an Antidiabetic.—Klug ascertained experimentally that the lymph from the thoracic duct contains a substance which interferes with consumption of sugar in the organism. Its nature is uncertain. He injected this lymph intravenously into three pancreatectomized dogs, and found that the blood sugar index sank; the level to which it sank varied in the different dogs. The result was the same whether autogenous or homogenous lymph was used. With a large initial dose the effect appeared to last through the day; a smaller dose had to be repeated. The action of the lymph seemed to be similar to but not so rapid or so strong as that of insulin. The quantity required is much larger and it is more difficult to obtain.

Jahrbuch für Kinderheilkunde, Berlin

112: 111-236 (April) 1926

Organ Analysis in Dystrophia. Aron and Pogorschelsky.—p. 111.
*Pneumococcus Immunity. F. von Gutfeld and E. Nassau.—p. 135.
Peptidase in Children. A. Mertz and H. Meyer.—p. 149.
*Vitamin C in Human Milk. A. Frank.—p. 169.
The Play of the Pupils in Infants. A. Peiper.—p. 179.
*Nitrogen Metabolism in Fever. O. Beck.—p. 184.
Psychotherapy for Hysterical Children. J. Schlesinger.—p. 218.
"Fatty Acids and the Intestine." Catel and v. Graevenitz.—p. 227.

Pneumococcus Immunity.—Gutfeld and Nassau injected suspensions or autolysates of pneumococci intracutaneously. A positive reaction was induced in about 17.5 per cent of the infants under 3 months of age and in 92 per cent up to the end of the first year. The reaction was always negative in infants with acute bronchopneumonia. The serum from children with a negative reaction neutralized the suspension.

Vitamin C in Human Milk.—Frank observed recovery from scurvy in an infant and prevention of it in others, although the guinea-pigs fed with the same (human) milk died from scurvy.

Nitrogen Metabolism in Fever.—Beck investigated the nitrogen metabolism in six infants with fever due to vaccination, measles or chickenpox. The balance was negative, the elimination of uric acid and especially of ammonia was high, the amino-acids low. Creatinin did not change.

Klinische Wochenschrift, Berlin

5: 681-736 (April 16) 1926

Problems of Metasyphilis. A. Bostroem.—p. 681.
Asthma and Anaphylaxis. K. Eskuchen.—p. 686.
*Insulin-Resistant Diabetes. E. Frank.—p. 688.
*Treatment of Asthma. W. S. van Leeuwen and W. Kremer.—p. 691.
Prevention of Metasyphilis. Hauptmann.—p. 695.
Work Metabolism in Exophthalmic Goiter. F. Kisch.—p. 697.
Protein Requirement in Acromegaly. E. Krauss.—p. 700.
*Syphilitic Disease of Vessels. P. Jungmann and R. Hall.—p. 702.
*Latent Edema. H. Guggenheimer and P. Hirsch.—p. 704.
Metabolism in Gout. K. Harpuder and L. Spitz.—p. 706.
Degkwitz' Measles Serum. K. Mosse.—p. 708.
*Excochleation of Bones. M. ten Doornkaat Koolman.—p. 709.
Colloidal Gold and Proteins. P. Uhlenbruck.—p. 710.
"Paralysis Encephalitis." F. Plaut.—p. 711.
Epituberculous Infiltrations. C. Henius.—p. 712.
Diagnosis of Endocrine Diseases. H. Bernhardt.—p. 713.
Leukocytes and Autonomic System. E. F. Müller.—p. 716.
Artificial Mineral Waters. O. Warburg.—p. 734.
Artificial Karlsbad Salts. F. Umber.—p. 734.

Insulin-Resistant Diabetes.—Frank sees an analogy to insulin resistant diabetes in the comparatively high resistance of glycosuria due to piqûres or epinephrine. It seems further that there may be combinations of nonpancreatic hyperglycemic diabetes with a renal glycosuria.

Treatment of Asthma.—Storm van Leeuwen and Kremer treated eighty asthma patients in special clean and airtight rooms supplied with cleaned air. They noted an almost complete cure of the asthma in 76 per cent, great improvement in 14 per cent, and no effect in 10 per cent. They investigated the probability of food factors by ordering a two day fast. The allergen-free room might be tried in treatment of eczema. They have already had encouraging results in treatment of some tuberculous subjects who are frequently allergic to substances contained in the air.

Syphilitic Diseases of Vessels.—Jungmann and Hall noted in the pathology institute of the Charité at Berlin an almost threefold higher incidence of syphilitic aortitis in the last five years than before.

Latent Edema.—Guggenheimer and Hirsch injected intracutaneously a solution which was isoionic with the blood. It disappeared faster in manifest and latent edema than in normal persons.

Excochleation of Bones.—Koolman believes that excochleation of the marrow of a long bone in dogs is followed after a negative phase by an increase of the erythrocytes above the original level.

5: 737-776 (April 23) 1926

Acid-Base Equilibrium. K. Gollwitzer-Meier.—p. 737.
*Serology of Mother and Fetus. L. Hirszfeld and Zborowski.—p. 741.
*Peroral and Percutaneous Immunization. Reiter and Kurokawa.—p. 744.
*Irradiated Milk. P. György.—p. 747.
Heart and Sport. H. Herxheimer.—p. 749.
Carbon Dioxide Baths. S. Hediger.—p. 751.
Fibers in Sputum. K. Herxheimer and C. M. Hasselmann.—p. 755.
Prevention of Measles. H. A. Gins.—p. 755.
"Blood Platelets." Stahl.—p. 755. Reply. G. Z. von Rokay.—p. 756.
Determination of Blood Sugar. M. Adler.—p. 757.
Complement Fixation. P. Moretti.—p. 758.
Endocrine Diseases. H. Bernhardt.—p. 758. C'cn.
Milk Supply. H. Selter.—p. 763.

Serology of Mother and Fetus.—Hirszfeld and Zborowski find that fetuses of the AB group (IV Jansky) are born from mothers of the O (I Jansky) group and fathers of the AB group less frequently than expected according to the laws of heredity. They believe that perhaps a man of the pure formula AABB might not have any children at all with a woman of the group O.

Peroral and Percutaneous Immunization.—Reiter and Kurokawa found sodium benzoate a valuable addition to peroral or intracutaneous vaccines in animals.

Irradiated Milk.—György succeeded in treatment of rickets with irradiated dried milk.

Medizinische Klinik, Berlin

22: 599-638 (April 16) 1926

Insulin in Diabetes. Umber.—p. 599.
*Monocytes and Trialism. V. Schilling.—p. 605. C'cn.
Professional Diseases of Physicians. J. Löwy.—p. 607. C'cn.
Symposium on Artificial Abortion. Opitz et al.—p. 610.
*Endogenous Iridocyclitis. J. Kubik.—p. 612.
Social Considerations and Sanatoriums. Grünbaum.—p. 615.
Optimism in Medical Art. L. Meyer-Homberg.—p. 618.
"Cactus Spines." G. Hauffe.—p. 619.
Histochemistry of Bismuth and in Differentiation of Tissues. E. Christeller, Komaya and K. Kaiser.—p. 619.
Suicide a Sequel of Trauma. W. Brandis.—p. 621.
Survey on Urology. R. Paschkis.—p. 624.
Iodine in Internal Medicine. A. Slauck. Supplement.—pp. 47-74.

Monocytes and Trialism.—Schilling concludes his survey of the monocytes as the third system of white blood corpuscles.

Endogenous Iridocyclitis.—Kubik was unable to induce iridocyclitis in rabbits by inoculations of material from granulomas from teeth extracted from patients with iridocyclitis. He had positive results with caries material from patients with corneal herpes. The substance taken from their teeth caused herpes in six cases.

22: 639-676 (April 23) 1926

Endocarditis Lenta. J. Lossen.—p. 639.
The Marathon Runner. P. Schenk and M. Wissemann.—p. 643.
Artificial Abortion. Henkel et al.—p. 645. C'tn.
Suture in Cryptorchidism. C. Springer.—p. 648.
Roentgen Injury. G. Gabriel.—p. 649.
*Lumbar Puncture. R. Korbsch.—p. 651.
Prevention of Measles. M. Meiszner.—p. 652.
Syphilitic Contracted Stomach. F. Hirschberg.—p. 653.
Papilloma of the Hypopharynx. F. Gumpertz.—p. 655.
*Hemorrhagic Pachymeningitis. A. Sonnenfeld.—p. 656.
Meinicke Turbidity Test. Laubenheimer and von Roques.—p. 657.
Psychosis from Being Censured. W. Brandis.—p. 659.
*Lecithin and Anesthesia. Birkholz.—p. 660.
Goat Milk Anemia. B. de Rudder.—p. 662. C'td.

Lumbar Puncture.—Korbsch recommends local anesthesia for lumbar punctures.

Hemorrhagic Pachymeningitis.—Sonnenfeld observed hemorrhagic cerebrospinal fluid in two cases of sunstroke.

Lecithin and Anesthesia.—Birkholz has continued his research in this line. He concludes that intravenous injections of large amounts of lecithin (up to 95 cc. of a 10 per cent emulsion) had no influence on the length nor on the after-effects of chloroform anesthesia.

Münchener medizinische Wochenschrift, Munich

73: 681-722 (April 23) 1926

Haff Disease H. Selter.—p. 681
Common Colds. H. Much—p. 684.
Pyelitis. W. Lehmann.—p. 686.
Technic for Third Meinicke Reaction. E. Meinicke.—p. 691.
Cholangeitis ex Ingestis. R. Jaksch-Wartenhorst.—p. 693.
Oil of Chenopodium W. Scharpff and Schneller.—p. 693.
"Occupational Hygiene." L. Teleky.—p 695.
Epidemic Encephalitis in China M. Pfister.—p. 697. C'cn.
*Fatal Blunders in Otorhinolaryngology. J. Zange.—p. 699.
Physician and Agrarian Reform. H. Krausz.—p. 702. C'cn.

Fatal Blunders in Otorhinolaryngology.—Zange warns against treating a supposed laryngitis for more than six weeks without consulting a specialist. A carcinoma might be overlooked. Syphilis is a frequent source of diagnostic blunders. It may resemble peritonsillitis and be neglected or maltreated surgically. It never causes trismus, while even a slight peritonsillitis is associated with difficulty in opening the mouth. Meningitic symptoms should always draw attention to the ear; so should slight rises in temperature in persons who have had inflammation of the middle ear at any time.

Wiener Archiv für innere Medizin, Vienna

12: 385-602 (April 15) 1926

Roentgenology of Right Arch of the Aorta. A. Arkin.—p. 385.
*Urobilinogenuria. W. Schiller.—p. 417.
Needle Electrodes. H. Kupf.—p. 429.
*Protein Injections and the Neutrophils. A. Hirsch.—p. 453.
Serum Ferments and Pregnancy. Herrmann and Kornfeld.—p. 469.
*Cerebral Dyspnea. L. Hess and E. Pollak.—p. 477.
Reciprocating Beat. D. Scherf and C. Shookhoff.—p. 501.
Chlorine Metabolism and the Stomach. G. Holler.—p. 515.
Theory of Auscultation. A. Winkler.—p. 569.
Polycythemia, Anemia and the Heart. L. J. Del Baere.—p. 593.
"Acute Leukemia." Beitzke.—p. 597. Idem. Sternberg.—p. 599.
"Pregnancy and Leukemia." G. Joachim.—p. 603.

Urobilinogenuria.—Schiller found no urobilinogen in the hematomas of women with ruptured extra-uterine pregnancy, although they eliminated the chromogen by the urine. Bilirubin was present in the extravasates. Intravenous injection of sugar (0.25 Gm. per kilogram of body weight in 25 per cent solution) was followed by a decrease in urobilinogenuria in the first months of pregnancy, by an increase in the later months.

Protein Injections and the Neutrophils.—Hirsch finds a parallelism between the changes of leukocytes, especially the shifting to the left, after parenteral injections of proteins and in infectious diseases.

Cerebral Dyspnea.—Hess and Pollak examined the brain in dyspnea not associated with cyanosis. In such cases of various origin (diabetic coma, grave insufficiency of the liver from atrophy or cancer, pernicious anemia, atherosclerosis and encephalitis) the pigmented cells in the locus coeruleus were swollen and degenerated. They conclude that the locus coeruleus is the center for nervous regulation of breathing in man.

Wiener klinische Wochenschrift, Vienna

39: 465-492 (April 22) 1926

*Skin and Pleura. J. Sorgo.—p. 465.
*Precipitinogen and Toxin. M. Eisler and N. Kovács.—p. 469.
Conduction from Sinus. C. J. Rothberger and D. Scherf.—p. 470.
Roentgen Ulcer. O. Reimer.—p. 471.
Roentgen Paper. G. Eichelter.—p. 473.
Coronary Circulation. R. Kaufmann.—p. 477. C'cn.
Contusion Injuries of Abdomen. R. Demel.—p. 480.
Crooked Back and Posture. J. Hass.—p. 481.
Theory of Diabetes. L. Pollak. Supplement.—pp. 1-16.

Skin and Pleura.—Sorgo observed an increased succulence as well as adherence of the skin of the chest when the pleura was affected by chronic processes. This is due to a stagnation of lymph, which drains normally the subcutis and muscles along the costal pleura. The absence of these symptoms indicates a free pleural cavity. An artificial pneumothorax is possible in such cases. He also uses the symptom in diagnosis between apical pleurisy and apicitis.

Precipitinogen and Toxin.—Eisler and Kovács conclude that the precipitate produced by an antiserum in filtered cultures of a hemotoxic cholera strain only adsorbs the toxin. They were unable to precipitate the toxin by its antitoxin.

Zeitschrift für Tuberkulose, Leipzig

44: 433-498 (April) 1926

Tuberculosis in School Children. F. Ickert.—p. 433.
*Tuberculin Sensitization. J. Caspari.—p. 447.
Outcome of Sanatorium Treatment in Open Tuberculosis. E. Warlimont.—p. 454
Open Tuberculosis. A. Winkler.—p. 458.
Gunshot Wounds of the Lungs. G. Schellenberg.—p. 469.

Tuberculin Sensitization.—After various failures, Caspari succeeded in sensitizing guinea-pigs against tuberculin by injecting fresh extracts from organs of tuberculous guinea-pigs which had been injected with tuberculin two hours before being killed.

Zentralblatt für innere Medizin, Leipzig

47: 377-392 (April 17) 1926

*Leukemic Blood. R. Jaksch-Wartenhorst.—p. 377.

Leukemic Blood.—Jaksch-Wartenhorst's patient had all the symptoms of acute pernicious anemia. She developed an additional hematologic syndrome of myelogenous leukemia three days before her death. Necropsy confirmed the former diagnosis. Carcinoma may also cause a transitory blood crisis resembling leukemia.

Russkaia Klinika, Moscow

5: 343-496 (March) 1926

Histology of Generalized Fibrous Osteitis. A. Abrikosoff.—p. 343.
Intubation of the Stomach. E. Batinkoff.—p. 375.
The Duodenal Reflux into the Stomach. V. Ivanoff.—p. 381.
*Hemorrhagic Diathesis with Liver Disease. V. Smotroff.—p. 409.
*The Endocrine Glands in Syphilis. E. Vasilieva.—p. 416.
*Brain Emulsion for Treatment of Epilepsy. V. Militzyn.—p. 426.
Postoperative Complications with Inflammation of Biliary Apparatus. I. Rufanoff.—p. 438.

Pathogenesis of Hemorrhagic Diathesis with Liver Disease.—Smotroff never found retarded blood coagulation or other signs of a hemorrhagic constitution in grave mechanical jaundice, unless there were diffuse lesions of the liver parenchyma. A deficient formation of thrombin is responsible for the faulty blood coagulation with diffuse lesions of the liver. The products of liver autolysis seem to inhibit the coagulation process. Lesions of the liver parenchyma are a secondary factor in the hemorrhagic diathesis, since experimentally it can be induced only by a combined injury to the liver and other tissues. In infectious jaundice, symptoms of a hemorrhagic diathesis as in hemorrhagic purpura may coexist with a normal number of blood platelets. Examination for signs of a hemorrhagic diathesis should be made in all patients with jaundice and liver disease, before operation.

The Endocrine Glands and Involuntary Nervous System in Syphilis.—Vasilieva noted enlargement of the thyroid gland in three of forty-two syphilitics, whether the syphilis was latent or in the secondary or tertiary phase. Atropine tests revealed a reduced sympathetic tonus, with vagotonia, in thirty. This testified to disturbances of the endocrine glands from the syphilitic infection. The phenomena disappeared after a prolonged specific treatment.

Brain Emulsion in Treatment of Epilepsy.—Militzyn applied brain emulsion in treatment of sixty-nine patients with grave epilepsy, rebellious to the usual measures. A daily dose of 1 cc. was given subcutaneously for thirty days, the series repeated at intervals of a month. No less than three series of injections were given. An improvement of sleep, appetite and mental condition was manifest in all. The number of seizures and their intensity became reduced in 92.7 per cent. The seizures appeared rarer in 38.8 per cent. The action on the mental faculties was particularly evident in one epileptic infant, aged 9 months. This treatment may prove effectual in prevention of dementia in epileptic children. The injections seem to be harmless; no by-effects occurred even after nine series.

Nederlandsch Maandschrift v. Geneeskunde, Leiden

13: 361-406, 1926

*Tetany and Alkalosis. J. G. F. de Geus.—p. 361.
*Skin Reactions in Scarlet Fever. Gorter and de Korte.—p. 383.
*Vaccination and Measles. J. Munk.—p. 399.
*Blood Transfusion in Infants. J. Slooff.—p. 402.

Tetany and Alkalosis.—De Geus' research on twenty dogs confirmed that tetany invariably develops when the calcium content of the serum falls below 8 mg. per hundred cubic centimeters. With a calcium content above this, tetany does not develop unless there is an excess of sodium present. Alkalosis alone does not induce tetany, and the phosphate ion does not seem to have any influence on its development.

Skin Reactions in Scarlet Fever.—Gorter and de Korte explain the differences in the behavior of diphtheria and scarlet fever toxins, and urge that conclusions from one cannot be applied to the other. In the filtrate of streptococcus cultures there is evidently something which has to do with scarlet fever, but this "something" is not a toxin. The filtrate of the culture, however, contains the virus of scarlet fever, and this multiplies in the culture. The blanching and neutralizing action of certain normal serums suggests that one antigen forms antibodies for the other, and vice versa. The invisible diplococci cultivated by Caronia on culture mediums free from streptococci, may be associated with the streptococci in the cultures of the latter. Skin reactions and active immunization have been realized with the Caronia microorganisms.

Measles During Vaccination.—Munk reports that a healthy child contracted measles the fourth day as her vaccination pustule was healing normally. The vaccinia flared up, and ulcers formed on the arm and trunk, with gangrenous centers. A vaccinia pustule developed on the other arm which ran a fourteen day course, as if there had been no immunization. The intercurrent measles seemed to have robbed the organism of all its defensive forces. In another child the eruption from intercurrent measles was most intense in the region of the pustule from the vaccination four days before the exposure to measles, but the ordinary course of the pustule was not modified. In two sisters given toxin-antitoxin preventive treatment against diphtheria, the eruption of an intercurrent chickenpox appeared first and was most pronounced in the region of the toxin-antitoxin injection.

Blood Transfusion in Treatment of Nutritional Disturbances in Infants.—Slooff's experience encourages blood transfusion as a routine measure in malnourished infants, especially when the child has to be restricted to water. In five instances described, the atrophy was of different origins, but the benefit from the transfusion was remarkable in the cases in which the vital energies were not at too low an ebb. In Gorter's experiments on rats, he was able to prevent or cure the atrophy from exclusive starch feeding by giving cod liver oil or yeast. In the infants whose cases are related there was no lack of vitamins; they seemed unable to absorb them from the intestinal tract, damaged by bacterial products or toxins. They were able to utilize those in the transfused blood, however, reaching the blood without having to pass through the intestinal walls. The transfusion may also bring antibodies for bacteria or toxins. Gorter succeeded in warding off keratomalacia and paresis in animals by injection of plasma alone.

Nederlandsch Tijdschrift v. Geneeskunde, Amsterdam

1: 933-1036 (March 6) 1926

*Hay-Fever. C. E. Benjamins et al.—p. 935.
*Pituitary Extract in Obstetrics. M. L. Muller.—p. 945.
Slight Modification of Naegele Forceps. Wesselink.—p. 957.
The Blood in Chronic Rheumatism. J. Van Breemen.—p. 958.
*Ether for Anesthesia. N. Schoorl.—p. 964.
*Retinal Hemorrhage with Blood Transfusion. G. A. Schaly.—p. 965.
*Fames Canina. J. Schrijver.—p. 969.
Household Remedies for Hiccup. C. Bakker.—p. 975.
Carolus Clusius, 1526-1609. B. W. T. Nuijens.—p. 979.

Hay-Fever.—Benjamins, Idzerda and Uittien made extracts of forty different kinds of plants in the Utrecht district that could be incriminated for hay-fever but tests reduced the number to six, and a polyvalent preparation made from this group has proved very successful and convenient. They warn that hay-fever is often assumed when merely spastic rhinitis is involved. There was an urticaria and pruritus or edema general reaction in two cases. The patient should be kept under supervision for half an hour after each subcutaneous injection, with epinephrine ready in case of by-effects.

Pituitary Extract in Obstetrics.—Muller remarks that much harm has been done with pituitary extract in childbirth, but analysis of such cases shows that the indications for and against it were not properly heeded.

Ether Anesthesia.—Schoorl insists that a bottle of ether once opened and standing around for a week, possibly exposed to the action of light, is not fit to use for general anesthesia.

Hemorrhage in the Retina After Transfusion of Blood.—Schaly encountered in 1925 three cases of impairment of vision soon after blood transfusion, which had been done on account of pernicious or aplastic anemia. In one case the eyes had been examined just before the transfusion, and there was no trace of hemorrhage. In one case the eyes were examined post mortem, confirming the extent and the irreparable nature of the disturbances. Vision is not impaired until the extravasated blood spreads toward the macula.

Fames Canina.—Schrijver reproduces the title page of three theses presented for the medical degree about 1660. The clinical picture described as fames canina was evidently an ulcer in the pylorus region, with dilatation of the stomach from stenosis, before the days of the stomach pump.

Mededeel. v. d. Dienst d. Volksgezondheid, Batavia

99-161, 1926. English Edition

*Reports from the State Vaccine Institute for the Netherlands East Indies. L. Otten.—p. 99.
*Rabies Department. J. van den Hoven van Genderen.—p. 115.
Bacteriologic Department. L. Kirschner.—p. 131.
Serum Department. P. Papamarku.—p. 145.

Vaccine Production in the Dutch East Indies.—Three kinds of animals are used in the preparation of vaccine against smallpox, rabbit, calf and buffalo, with retrovaccination from calf to rabbit and from buffalo and vaccinated subject. For preservation of the virulence of the virus in the tropics, the vaccine virus has to make thus a kind of circular movement. This technic has proved efficient, and the vaccine institute at Weltevreden despatched lymph in 1925 for more than twelve million inoculations. It aims to vaccinate the entire population of the islands, and revaccinate every ten years. Means to realize this more effectually are discussed.

Treatment of Rabies.—The Antirabies Institute uses the Högyes method, and this report states that fixed virus emulsified in glycerin diluted 25 per cent with normal saline solution retains its original virulence for more than a year when kept at from minus 10 to minus 15 C. Exceptionally fine and completely sterile emulsions are obtained by Nijland's method of shaking up the brain tissue, transferred directly from the skull to a small wide-mouthed bottle of thick glass, a quarter filled with glass beads. After adding some normal saline solution, the bottle is plugged and shaken by hand or with a small electric shaking apparatus.

Hospitalstidende, Copenhagen

69: 197-216 (March 4) 1926

*The Static Leukocyte Reactions. E. Jacobsen.—p. 197.

Leukocyte Reactions.—Jacobsen has confirmed Jørgensen's statements that the number of leukocytes in the peripheral blood capillaries changes on a change from the reclining to the erect posture. Jacobsen did not find the differences so great as the latter found, but they were unmistakable, sometimes over 20 per cent in blood from the finger as well as from the ear. To eliminate error from muscular strain, he fastened the subject to a table and tilted the table as desired. The data seem to testify that the changes are due to the heart and are not of peripheral origin. In two subjects with actual heart disease the blood in the ear and the finger blood did not parallel each other as in the twenty-two other subjects. The data all testify in favor of a central (cardiac) origin for the static leukocyte reaction.

69: 217-240 (March 11) 1926

*Formation of Gallstones in the Liver. S. Hansen.—p. 217.
Experiences with Transfusion of Blood. O. Kapel.—p. 228. C'td.
*Diagnostic Eversion of Rectal Mucosa. O. Jersild.—p. 234.

Gallstones in the Liver.—Hansen states that gallstones were found in 24.7 per cent of 392 adult cadavers examined in 1925 and two or more gallstones were found in the liver itself in seven, the ages from 68 to over 80. In six of the cases the bile ducts were more or less obstructed but in one man of 80 small, pure pigment calculi were found in the liver and also in the gallbladder and cystic duct. The bile was sterile, and nothing was found in the anamnesis or at necropsy to suggest stasis of bile at any time. In some of the others there was cholesterol with the pigment in the intrahepatic calculi. Some of the intrahepatic calculi were faceted, which disproves the theory attributing faceting to the pressure of the gallbladder. In conclusion he refers to J. Hoffmann's Geneva 1912 thesis on Intrahepatic Calculosis and E. Beer's study published in 1904 in the *Archiv für klinische Chirurgie* as the only literature available on the subject.

Diagnosis of Gonoccal Disease of the Rectum.—Jersild states that it is possible, with one or two fingers in the vagina, to evert the mucosa of the rectum in 60 or 70 per cent of adult women. This allows direct visual inspection of gonococcal proctitis which often escapes examination otherwise, owing to the folds and crevices. This eversion method smooths out the folds and brings enough of the mucosa into view to confirm the diagnosis, and possibly reveal an unsuspected fissure.

Ugeskrift for Læger, Copenhagen

88: 311-336 (April 1) 1926

Race and Sex Differentiating. Plumage in Fowl Bastards. Pézard et al. —p. 311.
Cholecystography. E. Møller and D. Ottosen.—p. 313.
*Convergent Spasm and Labyrinth Disease. G. V. T. Borries.—p. 322.
Direct Roentgenography of Gallstones. S. Hansen.—p. 328.

Convergent Spasm in Labyrinth Disease.—Borries reports experiences which show that either hysteria or a labyrinth fistula or both together may induce the convergent spasm in tests of vestibule function.

88: 337-362 (April 8) 1926

*Function of the Static Labyrinth. S. H. Mygind.—p. 337.
*Exophthalmic Goiter. C. Gram.—p. 345.
Double Ampule for Arsphenamine. Philipsen.—p. 349.
*Measles Convalescent Serum in General Practice. T. Kemp.—p. 351.
The Mode of Life and the Mortality. M. Hindhede.—p. 356.

The Functioning of the Labyrinth.—Mygind's profusely illustrated article presents arguments to sustain the contention that the static labyrinth is a part of the skin, with its corresponding nerve. The stimulus for it is a contact sensation, and its function is a contact-seeking reflex. The direction of the reflex is determined by the location of the irritated point in respect to the three dimensions of the space. He shows how this assumption explains the phenomena of past pointing and other vestibular reflexes.

Exophthalmic Goiter.—Gram gives some illustrations of an antique bust and modern cases of exophthalmic goiter, calling attention to the likeness between them. There do not seem to be any references in ancient literature to this disease, but some of the Roman sculpture suggests it. He thinks that treatment of exophthalmic goiter should be preeminently addressed to the mind. For this reason he urges a stay in a sanatorium or, better still, in a hospital. The change of scene in itself brings a rest from the daily discomforts or worries that have been instrumental in bringing on the disease, and the patient experiences great relief in talking things over with a bright, solicitous nurse. The general care in the hospital reduces or cures dyspeptic and other symptoms which have worried the patient. In addition to psychotherapy, he gives iodine and iron pills, outdoor rest cures, and if there is much agitation, sodium bromide, valerian, camphor or digitalis as indicated. The extremely toxic cases belong to the surgeon and iodine is strictly contraindicated. Roentgen exposures are also useful in checking thyroid function, but *there is danger of accomplishing too much with it, entailing* myxedema from thyroid insufficiency. Exophthalmic goiter has been known exceptionally in girls, and even in boys, before puberty.

Measles Convalescent Serum in Prophylaxis.—The three children, all under 5, slept in the same room with the father who had contracted measles. The children were all in the midst of whooping cough, and the sixth day of the father's measles they were injected intramuscularly with 10 or 15 cc. of convalescents' serum. None developed measles. The father, Kemp adds, donated serum when he was convalescent, to aid others in prophylaxis, and Kemp urges practitioners to aid in finding older children and adults willing to yield serum for the purpose.

88: 409-432 (April 29) 1926

*Innervation of the Stomach. E. Thomsen.—p. 409.
Dysregulation in Degenerates. V. Askgaard.—p. 411.
*Local Treatment of Varicose Veins. K. Alstrup.—p. 412.
Preparation of Dry Silver Nitrate-Treated Gauze. Tvedegaard.—p. 413.
Insurance Against Disability and the Campaign Against Tuberculosis. J. Frandsen and O. Bruun-Rasmussen.—p. 421.

Innervation of the Stomach.—Thomsen recalls that the innervation of the stomach consists of motor, inhibiting and secretory fibers in the vagus and sympathetic, besides the autonomic, intermuscular, Auerbach, and the submucous, sympathetic, Meisner nerve cells in the stomach walls. The left vagus dominates the secretion in the stomach; this was demonstrated anew by his cure of a man with gastric crises and periodic attacks of continuous hypersecretion so debilitating that operative relief was imperative. The man was restored to clinical health by resection of the vagus ramifications on the anterior aspect of the abdominal portion of the esophagus. The innervation of any organ cannot be regarded as an isolated phenomenon but only as an integral part of a great closely interlinked system. The local manifestation in the stomach is a result of nervous coordination. The effect of this coordinating work is most readily manifested in the secretory domain; the motor function responds more sluggishly.

Local Injection Treatment of Varicose Veins.—Alstrup has the patient stand on a footrest nailed to a long board standing upright. This allows injection in the erect position. An assistant then tilts the board over a saw-horse until the patient's head is lower than the feet. This seesaw apparatus leaves the operator's hands free all the time; the patient is still and tranquil, and the injection of the sodium chloride solution proceeds smoothly.

Correction

Neutral Red Serologic Test for Cancer.—Roffo's original technic for this test was with 2 cc. of serum to which were added 5 drops of a 0.03 per cent solution of neutral red. His latest publication gives the technic as 2 cc. of serum with addition of 5 drops of a 0.1 per cent solution of neutral red. This corrects the abstract on page 1877. His original communication was summarized, Feb. 13, 1926, p. 519.

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THE INFLUENCE OF UROLOGY ON LONGEVITY *

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The pessimistic Euripides states that "not to be born is best, and next, to die as soon as possible." Unfortunates, therefore, as human beings we exist, irrespective of our responsibility for our presence; but, contrary to the philosopher's advice, it seems to be a fundamental trait of human nature to want to live as long as possible, and man and medicine have ever striven to promote the public health and lengthen the span of life.

What should be the normal span of life? Dr. Darlington[1] tells me it is very doubtful whether the prevalent idea of three score and ten years, taken from the prayer of Moses,[2] should be our goal, since there is better biblical authority[3] "that a man's days shall be a hundred and twenty years," that every one dies prematurely, that no one dies of old age, and that even Methuselah, the oldest man, was drowned in the flood. That life expectancy has been and is steadily being lengthened is well supported by the investigations of preventive medicine and applied sanitary science. Indeed, it would appear from Carrel's experiments that cells are immortal; and recent studies with foods, vitamins and enzymes in animals indicate that the duration of life may be tripled. Apropos of longevity in the past, present and future, it is significant to note that for centuries before and after the time of King Tut, down to the discovery of America, the average length of life was eighteen years; at the time of the French Revolution it had increased to 33 years; at the time of our own Civil War it had advanced approximately to 45 years; at present it is about 57 years, and the longed for 70 may be reached within the next fifty years, maintaining the present ratio of medical progress.

What are the factors that have contributed most toward this remarkable improvement in vitality? In their order of importance they may be stated to be: (1) medical research and discoveries, e. g., vaccination against smallpox, bacterial origin of diseases, transmission of disease by vermin and insects, animal experimentation, study of anatomy, discoveries relative to tuberculosis, syphilis, diabetes and nephritis; (2) preventive medicine, including personal hygiene, sanitation, public health organizations and life extension centers, and (3) advances in medical and surgical diagnosis and treatment, particularly specialism and group clinics.

It is well known that the annihilation of certain of the scourges, epidemics and famines that were visited on mankind in ancient and medieval times played the most important rôle in materially lengthening life expectancy. It is also true that most of the twenty years added to longevity during the past century is the result of child hygiene and reduced mortality up to the age of 5. However, ten of these added years have been contributed during the last two decades, and I am not at all inclined to attribute the result entirely to preventive medicine. Unfortunately, figures are not available, nor can they be compiled at present, to show the part actually played by the marvelous advances in clinical medicine and surgery so far as the conservation of health and life is concerned. There are many reasons to indicate why life has been prolonged ten years in the past twenty or thirty, although only recently has there been a gain in life expectancy at the age of 50. Among impaired lives between the ages of 40 and 60, there has been a mortality reduction of 67 per cent. Obviously, it is just as impossible today to state in figures the proportionate rôle played by urology and clinical medicine as it is to compare accurately preventive and clinical medicine so far as their influence on longevity is concerned. That urology has exercised a definite important influence certainly cannot be denied, particularly in remembrance of the fact that, in the entire realm of medicine, there is no part or specialty in which diagnosis and treatment, by virtue of new inventions and discoveries, are more precise, satisfactory and complete.

In what respects has urology played its rôle and been an important factor in the prolongation of life?

The history of urology is one of the, if not the, most interesting and fascinating in the whole progress of medicine, and has been well portrayed by Gross,[4] the greatest of American surgeons and father of American urology, Smith,[5] Guiteras,[6] Young,[7] Martin,[8] Moore[9] and others. The names of Bossini, Civiale, Bright, Rayer, Simon, Hunter, Désormeaux, Thompson, Gross, Van Buren, Bigelow, Mercier, Guyon, Maisonneuve, Nitze, Casper, Israel, Brenner, Kelly, Rovsing, Otis, Brown, Albarran,[10] Richter, Zuckerkandl, Keyes,

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* Chairman's address, read before the Section on Urology at the Seventy-Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926.

[1] Darlington, Thomas: Personal communication to the author.

[2] Psalm XC, verse 10.

[3] Genesis, Chapter VI, verse 3; Chapter V, verses 25, 26, 27, 28; Chapter VII, verses 6 and 11.

[4] *Gross: On the Urinary Organs, 1851.*

[5] Smith: Operative Surgery **1**, 1855; Chirurgie, in Dictionary of Greek and Roman Antiquity.

[6] Guiteras: New York M. J. **76**: 617 (Oct. 11) 1902; Urology, 1912.

[7] Young, H. H.: South. M. J. **9**: 146 (Feb.) 1916; Practice of Urology, 1926.

[8] Martin: Urol. & Cutan. Rev., April, 1918.

[9] Moore, T. D.: J. Urol. **10**: 99 (Aug.) 1923.

[10] Albarran: Ann. d. mal. d. org. gen.-urin. **24**: 1760-1787, 1906.

Belfield, Voelcker, Cathelin, Chute, Cabot,[11] Cunningham, Young, Lewis, Squier, Buerger, Gunner, Geraghty, Legueu, Marion, Chevassu, Papin, Hinman, Kretschmer, Quinby, Bugbee, Caulk,[12] Braasch and many others represent strides in the development of our specialty, from the days of old when it represented all genito-urinary diseases, until its recent coronation as urology. Each recalls inventions, discoveries, research or valuable additions to surgical technic that have promoted the successful treatment of diseases of the urogenital tract, rendered surgery safe and ever safer for humanity, reduced mortality, and thereby lengthened longevity. Schmidt[13] rightly observes that progress in urology is to be measured by outstanding scientific discoveries and their influences rather than by dates or periods. Thus, by the invention of the urethroscope and cystoscope, instruments that have revolutionized urology in the last fifty years, the results, directly, in our specialty—namely, the visualization and accurate diagnosis even by photography and biopsy, if necessary, and treatment of lesions of the urethra and bladder; catheterization, diagnosis and differential diagnosis and treatment of kidney diseases; pyelography and ureterography; dilation of the ureter for strictures and calculi; intravesical operations, as ureterotomy, excision of bars, removal of foreign bodies, fulguration of tumors and implantation of radium—have been far reaching and almost incredible, and have exerted a truly incalculable effect on mortality reduction. Indirectly, we see daily the influences of the endoscope and cystoscope in many other specialties, as the pharyngoscope, bronchoscope, gastroscope and proctoscope.

Other milestones in the development of urology that deserve especial mention and have made possible its present state of excellence, whereby urologic diagnosis and treatment have been materially refined, morbidity reduced and mortality greatly lowered, are the discovery of the germ origin of disease, surgical antisepsis and asepsis, for without the latter cystoscopy and ureteral catherization would not have been tenable; roentgenology as applied to urology, including cystoradiography, ureteroradiography, pyeloradiography and pneumoradiography; epoch making researches and discoveries in pathology and bacteriology; functional kidney diagnosis; blood chemistry; immunology; serology, chemotherapy; diathermy and narcosis as applied to local infiltration, and the various modalities of spinal anesthesia.

Improvements in surgical technic, including preoperative and postoperative care of patients, have resulted in a tremendous conservation of life. For a full appreciation of this fact, a brief review of the past and present operative results for the more important genito-urinary diseases should be convincing. Deaths in Philadelphia from 1916 to 1925 inclusive from all causes decreased from 1,615.72 to 1,316.13 per hundred thousand, or 18.5 per cent; during the same period, for genito-urinary diseases alone, the decrease was from 175.81 to 129.69, or 26.2 per cent. This is a very commendable comparative showing for genito-urinary diseases, and seems to be in conformity with the progress of the specialty the last seventy-five years, as I shall try to show.

The treatment of stricture of the urethra by dilation is of great antiquity, and even today among the Thlinket Indians of Alaska and British Columbia in certain localities, employing a willow stick, constitutes the only method. Although Paré, in the sixteenth century, improved the technic of stricture operations, and Wiseman did the first external urethrotomy in 1652, and Physik produced his "stylet" for cutting strictures in 1795, treatment by cauterization and bladder puncture by the rectovesical, perineal and suprapubic routes as late as 1855 was practiced, with a mortality of from 7 to 11 per cent. This would have been much higher if cases of periurethral abscess, extravasation of urine and fistulas had been included. In 1908 the advancement in the treatment of stricture is well represented by the statistics of Watson and Cunningham;[14] namely, 0.5 per cent for gradual dilation, 1.1 per cent for internal urethrotomy, and from 1.56 to 4.9 per cent for resection or combined internal and external urethrotomy.

The best figures for orchidectomy in the past, for testicular tumors, are 19 per cent cures in the collected statistics of Chevassu.[15] Recently, Hinman has reported 35 per cent for his radical Wertheim operation.

Smith, in 1855, referring to the operation of Gross, who revived and successfully performed, eight times, the old operation of Celsus for varicocele, asserted that there was less risk of erysipelas of the scrotum than from Velpeau's operation, while the "compression method of Breschet resulted in death in several instances." Today the operation is a simple affair with practically no mortality, and varicocele is no longer even an absolute disqualification for military service.

A few decades ago, Segond reported a mortality of 29.8 per cent in 114 cases of abscess of the prostate. It is difficult to correlate this with the extremely low—less than 5 per cent—death rate at present.

Although Cole in 1884, in America, was first to perform prostatectomy (perineally), it remained for Belfield, [illegible] Gill, Goodfellow and Fuller to establish the [illegible] on a firm basis. As late as 1887, T[illegible] stated that successful prostatectomy was [illegible] In 1886, Ashhurst[16] said "There is nothing [illegible] ue surgically, nor is excision a procedure to [illegible] vocated"; also, when complicated by calculus, [illegible] lithotomy or lithotrity be done, regard should be had to the possibility of removing both of these causes of annoyance by the same operation." In the light of our present knowledge, is it any wonder that up to twenty years ago the death rate ranged from 15 to 50 per cent, whereas today Young reports 3.4 per cent, Freyer 5.5 per cent and Liebig 7.4 per cent in the collected statistics of 7,565 operations, suprapubic and perineal? Forty years ago, Ashhurst spoke very skeptically of the treatment of median bars, although section had been practiced and recommended by Guthrie, Mercier, Teevan and Gouley. Today Young reports a mortality of 2 per cent in 355 punch operations, while Caulk reports no deaths at all from his cautery punch, and says that "30 per cent or more of obstructions can be relieved by this method, thereby reducing the number of prostatectomies, and lowering the general mortality rate of prostatic surgery."

In 622 cases of intraperitoneal and extraperitoneal rupture of the bladder, Watson and Cunningham, in 1906, found a mortality of 88 per cent from palliative and 46.7 per cent from operative treatment; today, the operative death rate should not exceed one tenth of this.

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[11] Cabot: Tr. Am. Urol. A., 1911.

[12] Caulk, J. R., and Sanford, J. H.: J. Urol. **11**: 45 (Jan.) 1924; Value of Cautery Punch Operation in Removal of Vesical Neck Obstruction, J. A. M. A. **83**: 1993 (Dec. 20) 1924.

[13] Schmidt: Surg. Gynec. Obst. **40**, June, 1925.

[14] Watson and Cunningham: Genito-Urinary Diseases, 1908.

[15] Chevassu: Rev. de chir., 1910, p. 628.

[16] Ashhurst: International Encyclopedia of Surgery **6**, 1886.

During the last thirty years, the death rate from diverticulum of the bladder has decreased from 80 to 8 per cent.

Since the third century B. C., when Ammonius performed the first lithotripsy, and the dawn of the Christian era, when Celsus described the first lithotomy down through the middle ages, when attempts were made to dissolve stones by various agents from gastric juice to goat's milk, not to speak of the much vaunted concoction of the notorious Johanna Stephens, who swindled the British parliament out of £5,000, and in spite of the astonishing results of the great lithotomists, the Colots and Frère Jacques, who cut for stone more than 5,000 times and was finally exiled from Paris because most of his patients died, and Cheselden, who could perform the operation in fifty-four seconds, the mortality in Gross' time ranged from 11.4 to 50 per cent. In 1908, in 33,869 collected cases, in which operation was done suprapubically, perineally or by litholapaxy, Watson and Cunningham reported the death rates 13.2, 10 and 2.4 per cent, respectively. During the last twenty years, in the best American clinics, the mortality for cystolithotomy has been reduced to less than 5 per cent.

Until very recently, the treatment of bladder tumors, even papillomas, was both the nightmare and the despair of surgeons. The introduction of cystoscopic fulguration in 1910 by Beer revolutionized the treatment of benign tumors, and has lowered the mortality from this particular type of vesical growths, constituting the majority, practically to nil. Although the treatment of carcinoma of the bladder, by partial or complete cystectomy, roentgen ray, diathermy and radium, thus far, has been disappointing and has not measured up to our hopes, something has been accomplished. Symptoms have been relieved and life prolonged from a few months to one or two or more years, in many incurable cases, as compared with a 100 per cent death rate a few decades ago. In an analysis of forty-three patients of my own, 13.8 per cent lived from three to ten years, and 10.3 per cent were alive and free of symptoms. The operative mortality was approximately 10 per cent.

Ureteral implantation into the sigmoid after the Coffey-Mayo technic promises a far reaching influence in the reduction of ascending renal infections, at the same time rendering possible surgical extirpation of the bladder and other pelvic viscera, thereby immeasurably affecting longevity.

From the time of Hippocrates, 460-357 B. C., who first "operated for calculi of the kidney by incision," until 1869, when Simon performed the first successful nephrectomy for calculous pyonephrosis and presented his epochal monograph on the surgical affections of the kidneys, renal surgery received little attention. Ten years later, Pilcher could find only fifteen cases of nephrectomy in the literature. In 1885, Gross reported a mortality of from 20 to 60 per cent for pyonephrosis, tuberculosis and tumor. In 1912, Guiteras reported a mortality of 10 per cent for nephrotomy and 30 per cent for nephrectomy, and stated that in tumor it might reach 50 per cent. Today a conservative estimate of the death rate from nephrectomy is from 5 to 10 per cent. At the Mayo Clinic, in 863 nephrectomies for tuberculosis, the mortality was 2 per cent, while Young reports an operative mortality of only 0.89 per cent in 112 patients.

Time forbids the further presentation of data, especially that bearing on the reduction of the death rate in chronic nephritis, as the result of organized health center work. Enough, surely has been stated to show that thousands of lives have been prolonged and spared by the progress of urologic surgery, nor is it necessary or possible, accurately, to set down comparative statistics with other factors or fields of medical or surgical endeavor to substantiate the fact.

The most potent force that has enabled urology to exert its influence on longevity has been its recognition as a specialty, whereby the public and the general practitioner have come to appreciate the significance and importance of certain symptoms and indications, and realize the value of prompt investigations and expert procedures. No specialty has struggled harder than ours to throw off the mysticism, dogmatism, ignorance and superstition of the past, and today the spires of urology scintillate high and magnificently in the heavens of the medical world.

The present day cry of "overspecialization" is fraught with great danger, second only to the attempts to subjugate urology to general surgery. Statistics as long as the eye can reach can readily be produced to prove the fallacy of this contention. However, common sense and the elimination of selfishness are all that are required. Cabot has aptly said, "The best results will fall to the surgeon who supervises from beginning to end the investigation and who applies the remedy, rather than to the operator, who may be eternally confounded by the error of an assistant." Division of responsibility, ofttimes, is bound to affect the best welfare of patients.

Two factors that are doing most and are destined to produce the greatest benefits in the future, so far as urology and its influence for humanity and longevity are concerned, are: first, fundamental, systematic, broad graduate instruction and training of would-be urologists, qualifying them for special major surgery, not merely cystoscopy and venerology; and, second, the creation in our hospitals of special wards or departments for urologic surgery, with a personnel of residents, interns, nurses and orderlies trained and assigned, at least temporarily, solely to that specialty. Then and only then will the best results be obtained. It is already universally recognized and true for other specialties, as orthopedics, pediatrics, ophthalmology, obstetrics and gynecology. It must follow for equally good and better reasons for urology.

1900 Spruce Street.

Microbe of Oroya Fever.—Oroya fever, or Carrion's disease, is a highly fatal infection endemic in certain regions of Peru. Its most striking clinical feature is a rapidly progressing severe anemia, associated with febrile reactions. In the erythrocytes of patients suffering from the disease, Barton found, in 1905, peculiar bacilliform elements, the specificity of which has been confirmed by Barton's subsequent observations and those of later investigators. Strong, Tyzzer, Sellards, Brues and Gastiaburu concluded that these bodies are of protozoan nature and proposed for them the name of *Bartonella bacilliformis*. Inoculation of cultures of *B. bacilliformis* into young rhesus monkeys induced intermittent fever lasting many weeks. Typical endoglobular forms of *B. bacilliformis* have been demonstrated in the erythrocytes of these animals. Intradermic inoculation of the culture into the eyebrows gave rise to highly vascular nodules, resembling the nodules of experimental verruga induced in monkeys by previous investigators. *B. bacilliformis* can readily be recovered in pure culture from the blood, lymph glands, spleen and nodules, and passages from animal to animal are easily carried on.—Noguchi, Hideyo; and Battistini, T. S.: *Science* **63**:212 (Feb. 19) 1926.

CONNOTATION OF CONSTITUTIONAL PSYCHOPATHIC INFERIORITY WITHOUT PSYCHOSIS

A STUDY OF FIVE HUNDRED DIAGNOSES *

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Approximately 7 per cent of case histories in the neuropsychiatric outpatient department of Veterans' Hospital 81, New York, reveal a diagnosis of constitutional psychopathic inferiority or some synonymous term, made once or oftener during the last six years by attending specialists of the Veterans' Bureau and its predecessor in this field, the United States Public Health Service The purpose of this study was to determine what diagnostic criteria were adducible in each case toward the conclusion that a constitutional psychopathy was present The findings of thirty-three neuropsychiatrists are recorded in the series of 500 alphabetically consecutive histories

Constitutional psychopathic inferiority without psychosis is employed here as a generic term to include the six classes of constitutional psychopathic states noted in the nomenclature,[1] viz, criminalism, emotional instability, inadequate personality paranoid personality, pathologic liar and sexual psychopathy (One more term, nomadism, is added to an otherwise identical list in a recent United States Army publication[2]) The Public Health Service nomenclature formally separates constitutional psychopathic state from constitutional psychopathic inferiority, but the apparent interchangeability of these terms has made strict adherence to their differentiation rather doubtful in outpatient examining work. This issue is avoided by the introduction and common use in the case histories of an ambivalent phrase, "constitutional psychopath" One frankly equivocal diagnosis appears as "C P I. state."

A careful attempt to differentiate between the two terms has been made by Visher[3] as follows: "Constitutional psychopathic state is differentiated from constitutional psychopathic inferiority by the presence of such morbid manifestations as lie in the immediate foreground of insanity. . . There is usually no history of marked industrial inefficiency or of antisocial conduct, and what gross maladaptation is present does not extend back to early life" Certainly this differentiation is difficult to make, even under the most favorable circumstances of study. Whether it is quite valid, e g, whether sexual psychopathy, one of the constitutional psychopathic states, can be separated from constitutional psychopathic inferiority and construed as not extending back to early life, is questionable.

"Constitutional inferiority" was first introduced into American psychiatric terminology by Meyer[4] only two decades ago. Karpas,[5] after describing "psychic constitutional inferiority" in 1913 as the foundation of most if not all the psychoses, subjected it three years later[6] to a more minute analysis. In this he subtracted the group of intellectual inferiors, and three subgroups of emotional inferiors (individuals with shut-in personalities, manic-depressive make-ups, and hysterical and neurasthenic temperaments), leaving one emotional subgroup (including the crank, psychopath or "congenital psychoneurosis") and a final group of volitional inferiors His discussion of volitional inferiority is chiefly concerned with delinquency. Goddard,[7] in 1921, carefully separated psychopathy with or without arrested development from arrested development alone. Two tendencies appear in the literature, first, toward distinguishing a class of psychotic and inferior personalities definitely from the mental defectives on the one hand and from the psychotics on the other, and, second, toward including progressively more of the delinquent types in this class

The table gives the incidence rates of twenty-one characteristics One finding of a given trait conditions a single entry, except for traits marked with the asterisk The counting of a trait in one of these starred groups may be duplicated in other starred groups; that is, such groups overlap.

Incidence Rates of Twenty-One Characteristics

Classes of Characteristics		Characteristics	Incidence in Number of Cases	Incidence in Each 100 Cases
Physical manifestations	*a*	Anatomic stigmas	40	8
	**b*	Sexual anomalies	21	4
	c	Enuresis (after age 5)	11	2
	d	Onychophagia	12	2.5
	e	Stuttering and stammering	46	9
Addictions	*f*	Drug addiction	8	1.5
	g	Alcohol addiction	50	10
	h	Tobacco addiction	11	2
Traits suggesting manic-depressive make-up	*i*	Emotional instability	318	63.5
Traits suggesting manic and paranoid tendencies	*j*	Grandiosity and excessive self-esteem	102	20.5
Traits suggesting paranoid trend	**k*	Paranoid personality	90	18
Traits suggesting schizophrenic make-up	**l*	Metatopomania	97	19.5
	m	Polypraxia	240	48
	n	Working beneath mental capacity	9	2
Traits suggesting mental deficiency	**o*	Poor cooperation and refractoriness	179	36
	**p*	Unreliability (other than *q* and *r*)	157	31.5
	**q*	Conscious exaggeration of symptoms	207	41.5
Conduct disorders	**r*	Malingering (charged as such)	28	5.5
		Malingering suspected	11	2
	**s*	Truancy and A W. O L. tendency	74	15
	**t*	Trouble making	95	19
	**u*	All conduct disorders	250	50

Taking up the characteristics in order, one notices, perhaps as a trend of the times toward rejecting Lombroso[8] and not yet assimilating Draper,[9] that anatomic features have received scant attention in the records of the psychiatric examinations surveyed. (*a*) Stigmas are noted in no more than 8 per cent of these case records, though they doubtless marked a considerably larger number of claimants. House[10] divides his constitutional psychopathic inferiors into two classes, roughly "static" and "dynamic," in both of which the stigmas of degeneracy show a high incidence. No one of the classes in the Public Health Service nomenclature is quite coterminous with either of those. Most of House's static cases can be considered inadequate personalities, and his dynamic ones may be distributed among the other classes.

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* Read before the Section on Nervous and Mental Diseases at the Seventy Seventh Annual Session of the American Medical Association, Dallas Texas April, 1926

[1] Nomenclature of Diseases and Conditions, misc pub 16, U S P H S, 1921

[2] National Guard reg no 28, Dec 31, 1924, AR40 105, §20, p 93, June, 1921

[3] Visher, J W: A Study in Constitutional Psychopathic Inferiority, Ment Hyg **6**: 729 (Oct) 1922

[4] Meyer, A Report of the Pathological Institute, New York State Commission in Lunacy, 17th Ann Rep, p 79, 1904 1905

[5] Karpas, M J Psychic Constitutional Inferiority, New York M J. **97**: 594 (March 22) 1913.

[6] Karpas, M J.: Constitutional Inferiority, J. A M. A **67**: 1831 (Dec 16) 1916

[7] Goddard, H H. The Subnormal Mind Versus the Abnormal, J. Abnorm Psychol **16**: 47 (April) 1921

[8] Lombroso, Cesare Criminal Anthropology, Its Origin and Application, Forum, September, 1895, p 13, L'uomo delinquente, ed 5, Turin, Bocca, 1896

[9] Draper, G. Human Constitution, Philadelphia, W. B. Saunders Company, 1924

[10] House, W Constitutional Psychopathic Inferiority, California State J. Med **21**: 26 (Jan) 1923

To the small category of (*b*) sexual anomalies, 4 per cent, have been referred both feminine (all of these cases were of males) secondary sex characters, and habits of sexual perversion. (*c*) Enuresis, found in 2 per cent, when it accompanies other suspicious symptoms, is likely to be included in the evidence for a constitutional psychopathy; similarly (*d*) onychophagia, with an incidence of 2.5 per cent. Much of (*e*) stuttering and stammering is referred to hysteria; enough still remains to be noted as evidence of an inferiority in 9 per cent of the series. The proportion of cases that show (*f*) drug, (*g*) alcohol and (*h*) tobacco addictions, respectively 1.5, 10 and 2 per cent, is comparatively small. Tobacco addiction is understood to mean a pronounced and excessive, not a moderate, tobacco habit.

(*i*) Emotional instability, with the highest incidence of all, 63.5 per cent, is a trait or rather group of traits that recalls the milder types of emotional insanity and mental deficiency, as well as some hysterias and anxieties. The emotional instability belonging to inferiority differs somewhat from a manic-depressive make-up. The "constitutional psychopathic personality" is the more comprehensive conception; furthermore, it means something pathologic: a "manic-depressive make-up" describes a personality that is not necessarily pathologic so long as a psychosis is not superadded.

Emotional instability is common to various psychoneuroses as well; of these, transference neuroses are less readily confused with constitutional psychopathic inferiority than are the narcissistic states. An acquired instability may conceivably be based on a relatively stable make-up, and should not lead to a hasty conclusion of constitutional psychopathy. Again, instability is but one part of a symptom-complex, the diagnosis of which cannot be expected to rest on that finding alone. The emotional abnormality exhibited by a well marked epileptic personality, for example, can typically be distinguished from the constitutional psychopathic picture. Clark [11] points out that "if it be true that in essential or idiopathic epilepsy there is a more or less definite make-up, a character type of supersensitiveness, egotism, poor adaptability, and a certain defect in the power for development of the emotional life as contrasted with the intellectual equipment per se, then . . . the absence of these stigmas . . . should make us hesitate before finally committing ourselves to a diagnosis . . . of essential epilepsy."

(*j*) A grandiose tendency and exaggerated self-esteem, part of a manic make-up, appear in 20.5 per cent. (*k*) Paranoid personality is found in 18 per cent; many of these individuals, if sufficiently analyzed, would prove to be of prepraecox types corresponding to certain of the "schizoids" of Brill;[12] but since they have not developed psychoses they are habitually grouped here. He explains that "the expression 'schizoid,' which gives the picture of schizophrenia in extreme forms, . . . designates a type of psychic being and psychic reaction which exists in a more or less pronounced form in every person. . . . In predisposed individuals these reactions [syntonic or schizoid] may become markedly enhanced and then result in a psychosis of either type. . . . A great many of them never go beyond a certain point with their schizoid tendencies."

Though close to the simple praecox category, (*l*) metatopomania, the tendency to wander from place to place, and (*m*) polypraxia, a similarly habitual wandering from one occupation or place of employment to another, are not pathognomonic of a deteriorating psychosis. In this series they are found mentioned as evidences of psychopathic inferiority in 19.5 and 48 per cent of cases, respectively. In exceptional cases, 2 per cent, (*n*) employment at occupations beneath the mental capacity has assisted in making the diagnosis.

(*o*) Poor cooperation and refractoriness to treatment is a sufficiently convenient and important administrative concept to be recognized, applying, as it does, to more than a third (36 per cent) of the constitutional psychopathic claimants treated. It does not pretend to approximate a unit character, and is found as often in mental deficiencies, and paranoid and hypomanic states. (*p*) Unreliability is almost as prevalent (31.5 per cent), and is similarly ill defined and suggestive of mental defect.

(*q*) Conscious exaggeration, noted in 41.5 per cent, contrasts with (*r*) malingering, in 5.5 per cent. The latter term, on the authority of Jones and Llewellyn,[13] should include exaggeration when this is conscious; but malingering is a "crime," and diagnosing it puts a burden of proof on the examiner that he will not be expected to assume without considerable deliberation.

Next to emotional instability, some form of (*u*) conduct disorder understood in its broadest sense is the commonest characteristic found, appearing in exactly half of the cases. This group includes all of three others (malingering, [*s*] truancy, and [*t*] trouble-making) and parts of four more (sexual anomalies, unreliability, conscious exaggeration, and refractoriness to treatment). The habitual disturbers and trouble-makers, constituting 19 per cent of this series, must often be placed at the same time in the paranoid personality group. Truancy is not infrequent and would probably have appeared oftener if it had been practical to obtain social service histories in all cases.

The diagnosis of "constitutional psychopathic state, criminalism" has been very rarely made, and "delinquency" never. Evidently it has been usual to consider antisocial manifestations as contributing to certain neuropsychiatric symptom-complexes, rather than constituting a principal disease. This brings up the whole question of "moral imbecility" and the difference between legal, ethical, sociological, psychologic and medical conceptions of antisocial conduct, so well delineated by Tredgold,[14] and exhaustively debated by Stoddart,[15] Shrubsall [16] and Burt.[17]

If a diagnosis of "no nervous or mental disease, delinquency," "no nervous or mental disease" or "delinquency" alone is made in a case showing delinquent tendencies, the examiner will be clearly committed to the definite view that full responsibility exists. On the other hand, the diagnosis of "constitutional psychopathic inferiority" or "constitutional psychopathic state, criminalism" may be construed either as noncommittal, that is, a symptomatic diagnosis, or as committing the examiner to the conclusion that responsibility is relatively impaired because of the presence of a mental disease other than imbecility or psychosis; namely, constitutional psychopathic inferiority, then a [psycho] pathologic diagnosis.

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[11] Clark, L. P.: The Diagnostic Importance of Recognizing the Absence of the Epileptic Make-Up in States Simulating Idiopathic Epilepsy, Boston M. & S. J. **177**: 915 (Dec. 27) 1917.

[12] Brill, A. A.: Schizoid and Syntonic Factors in Neuroses and Psychoses, Am. J. Psychiat. **4**: 589 (April) 1925.

[13] Jones, A. B., and Llewellyn, J. L.: Malingering, Philadelphia, P. Blakiston's Son & Co., 1918.

[14] Tredgold, A. F.: Moral Imbecility, Proc. Roy. Soc. Med. London, Sect. Psychiat. **14**: 13, 1920-1921.

[15] Stoddart, W. H. B.: Delinquency and Mental Defect, Brit. J. M. Psychol. **3**: 188 (Aug.) 1923.

[16] Shrubsall, F. C.: Delinquency and Mental Defect, Brit. J. M. Psychol. **3**: 179 (Aug.) 1923.

[17] Burt, C.: Delinquency and Mental Defect, Brit. J. M. Psychol. **3**: 168 (Aug.) 1923.

In psychopathic inferiority with psychosis or with imbecility, irresponsibility may be referable to the psychosis or to the mental deficiency. Accompanying mental defect of the moron grade is frequent. Psychometric tests, made on many individuals in this series, show levels from that of a medium grade imbecile reaching the mental age of 5 (three cases), to that of a superior adult.

Crime to some examiners presupposes a morbid mental condition and therefore demands a medical diagnosis, though there is not quite that unanimity conceived of by Sands,[18] who holds that "the objective of all workers in the various phases of psychiatry is the consideration of all behavior disturbances as manifestations of a disease process, and the problem as medical." The including of "constitutional psychopathic state, criminalism" in the nomenclature does suggest that the case of an habitual criminal should not be diagnosed "no nervous or mental disease." Two such cases in this series have been called psychopathic on no other evidence than that of delinquency. The medical status of an occasional criminal is not necessarily settled. The question is still open whether all possible neuropsychiatric diagnoses of the case of a known criminal must be confined to the triad psychosis, mental deficiency and constitutional psychopathic inferiority or state, or whether a fourth diagnosis, no nervous or mental disease, is admissible.

A constitutional psychopath has been defined[19] as "one that does not possess and display the amount of kindliness, honesty, reliability, loyalty, independence, persistence, emotional control, and resistance to the development of psychotic episodes, average for his race and intelligence level; he need not be deficient in all these qualities, but his deviation from the normal is permanent and appears in his history as a developmental defect."

The following case histories are illustrative of the more commonly found characteristics:

Case 1.—*Prewar.*—Admittedly he was a frequent truant from school; finally he left when in grade 5 B, at the age of 16. He was subject to fits of temper. He worked as a laborer and factory helper, continuing only for short periods at successive jobs; e. g., three months, one month, one month.

Military.—He was inducted, April 2, 1918, and discharged without disability, April 2, 1919. He stated that he spent three months in a hospital after being gassed, Sept. 27, 1918, and that cough and nervousness had persisted since.

Postwar.—He worked for brief periods as a shipping clerk. He was violent and abusive to his sister and his mother, whom he called a prostitute. He was granted training with pay by the Federal Board for Vocational Reeducation; he insisted on frequent trials of different types of training, taking successively sign painting, electric apparatus manufacturing, electric wiring, pen making, mechanical drawing and agriculture. In every place he paid little attention to work, but harangued other trainees and occasionally abused bureau officials and employers; he was often late or absent without leave, generally obstinate in refusing to follow directions, and domineering and disagreeable to his fellow trainees, failing in the task at hand but always claiming that he could succeed at something more complicated. Transfers and reinstatements in training were finally stopped after he had been treated more than liberally, and he spent the next two months idling about the bureau office, trying to cajole or browbeat the authorities into granting him further funds, without making any attempt to secure employment. He was a prolific letter writer, and in a loquacious letter to a bureau chief, he called the teachers who had endured so much from him "contemptible curs" and scornfully described his medical treatment on the same page with his claim that he had been refused all treatment. Physiotherapy had been arranged for him, which he refused to take. When psychotherapy was attempted, he tried to argue the medical examiner out of every approach he made. He spent recklessly the ample government money received while in training, saved nothing, and was irregular in paying his board bill. He refused to make any contribution to the maintenance of his mother, who was in need. He liked to be melodramatic with the Red Cross and other social workers, whose reports emphasized his exaggerated sense of his own importance. He was arrested four times for disorderly conduct.

He was repeatedly examined as a psychotic suspect, but no mania, paranoid state or other psychosis was ever diagnosed in his case. Psychometrically he measured of superior intelligence, with intelligence quotient 119. Physically he never showed more than a mild bronchitis, which he exaggerated to the utmost.

Case 2.—*Prewar.*—In childhood, he was admittedly incorrigible at home; the school records showed him poor in studies and deportment, and difficult to discipline; he was bad tempered, and tried to strike the principal. He did not go beyond the eighth grade, though he claimed that he had finished high school at 15. He worked at odd jobs.

Military.—He enlisted, March 3, 1918, at the age of 16, which he gave as 18; he was discharged without disability, June 19, 1919, though he afterward claimed that he had had various sorts of "spells" after being "gassed" in France. Later he enlisted in the navy, from which he received a medical discharge for nervousness.

Postwar.—After his second discharge, he worked again at odd jobs, in a dance hall, driving a car for friends, etc. He went from place to place, living by his wits, and was hospitalized in different cities for vague and variable nervous complaints. He sought sympathy from one prospective employer by declaring that he had only one lung, when in fact he did not even have bronchitis.

He worked only two months, and was dropped for his lazy attitude. He was granted training with pay by the federal board; he had trouble with the training officers on account of his irritability, lack of interest, and thoroughgoing unreliability; he started in mechanical dentistry, transferred to dentistry, and then went back to mechanical dentistry.

He married hastily, lived with his wife only two days, and took the episode as a joke. She returned to her parents in three weeks on account of his abandonment and abuse. Afterward he talked bombastically of what he would do to her if he found her.

On examination, he would pull himself away from the examiner and hold himself rigid instead of cooperating. At one time he attempted to malinger epilepsy. He had no physical disease; he showed onychophagia, but little else objectively. He failed to keep his appointments for treatment.

When asked his age, he replied: "I've lied so much about my age, I don't know what it is." When asked why he left one city on one occasion, he gave three different conflicting reasons in the same conversation. His social service history was filled with notes on his habitual lying and trouble with every one.

Case 3.—*Prewar.*—He had two years' high school education, followed by an evening commercial and a correspondence course. In view of his mental capacity and training, his spelling was poor. He worked as a traveling salesman. He was always restless and fidgety.

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[18] Sands, I. J.: The Psychiatric Clinic in the General Hospital, J. A. M. A. **85**: 723 (Sept. 5) 1925.

[19] Anonymous.

Military.—He enlisted, Oct. 7, 1917, at the age of 25, and was discharged without disability, Nov. 23, 1918. He did not go overseas and was not exposed to any stress other than an operation for a sacrococcygeal cyst.

Postwar.—He worked for a short time, and then claimed nervousness on account of the cyst, which was inconsequential; he demanded and obtained hospitalization, during which it was again operated on.

He was granted federal board training with pay, which he retained for three years, while constantly applying for transfer from one subject to another; he was given sign painting, photography, and four varieties of salesmanship training. Eventually his lack of cooperation and absences without leave caused the termination of his training; he then spent a long time trying to be reinstated, instead of trying to work.

On examination, he claimed severe incapacitating illness, physical and nervous, demanding treatment and more training, and in almost the same breath claimed that he was making more money in his prewar work than he would receive in training. He evaded direct questions, dilated glibly on diagnoses, and took issue with the examiner on the technical features of the neurologic examination. Most of his complaints were belied by his manner of relating them. He appeared to be in the best state of health when he complained most volubly. He took no interest in improvement, repeatedly missing his appointments for treatment.

CONCLUSIONS

1. Five hundred diagnoses of constitutional psychopathic inferiority and constitutional psychopathic states, by thirty-three neuropsychiatrists, have been based on a number of accepted symptoms and symptom-complexes of these conditions, emotional instability being the most frequent.
2. The diagnosing of constitutional psychopathic state, emotional instability, is unsound unless this instability is definitely shown to be a fundamental attribute, not one acquired in later life.
3. In the present state of medicopsychologic knowledge, constitutional psychopathic inferiority or state should be considered a symptomatic, not a pathologic, diagnosis.
4. Criminalism should be omitted from the list of constitutional psychopathic states, since crime and responsibility are problems still too disputed and too extensive for its boundaries.

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ABSTRACT OF DISCUSSION

Dr. William House, Portland, Ore.: There is urgent need for a more acceptable concept of the term "constitutional psychopathic inferiority," and the analysis presented by Dr. Huddleson is helpful to that end. But it deals only with males whose reactions have been influenced by military service and who, in many instances, are capitalizing natural weaknesses not at all the results of that service, to lessen the burdens of existence. The reactions of those to whom such opportunities are not open will produce many symptoms not on his list, as those occurring in women and peculiar to their sex, the nature of some of which may readily be inferred. Constitutional psychopathic inferiority may manifest itself long before military age, or, though it has been present from birth, it may escape detection until long past military age, with results which, naturally, Dr. Huddleson has not mentioned. One of the most important symptoms that first calls it to attention is lack of adaptability to changing conditions and environment. To comment on some of the symptoms discussed, metatopomania is perhaps no more frequent than its antithesis, and those who live a lifetime in one place, remote from the conveniences and comforts of modern civilization, often do so because inferiority has made it impossible for them to make any struggle for existence other than that of work, often poorly done, which requires little planning. Likewise, polypraxia is probably no more frequent than the reverse, that is, inability to escape from the rut of what, by way of contrast, might be called monopraxia; and a lifelong pursuit of a single kind of work that is unprofitable and uncongenial is often the result of lack of resourcefulness and adaptability, which makes change difficult or impossible. Even criminality as a possible symptom of inferiority has its opposite in those whose lives are rendered futile by overconscientiousness. My concept of a psychopathic inferior individual is that of one who is fundamentally, congenitally and usually inherently defective, from structural, as opposed to pathologic, incompetence, either in the quality of the materials of which he is made or in the faulty assemblage of his mechanisms, but whose defects do not reach the degree of feeblemindedness; who gets along fairly well if kept strictly within his limitations, but falls below the average in ability to reason and apply the results of reasoning pragmatically; who, as a rule, exhibits many stigmas, and who readily develops a psychopathy when subjected to unaccustomed strain. He is, in short, a kind of human "flivver," possessing many of the virtues of a "flivver," but developing its erraticisms when least expected and often at the most inopportune times.

Dr. Sidney I. Schwab, St. Louis: I should like to ask Dr. Huddleson just what advantage there is in attempting to divide a material of that sort in so complex a manner. There are so many terms of doubtful meaning in his classification and some of the words are so difficult to understand and are susceptible of so many different interpretations that a confused idea may well result. A great many of the subdivisions and classifications are apt to be interpreted from a purely personal point of view; that is, the reader of the paper may know just what the terms signify, but the reader of or listener to the paper may have but little conception of their meaning. A minute classification does not necessarily add clearness to the conception of the subject. My criticism, simply stated, is that an intricate system of classification does not of itself throw any additional light on the meaning, interpretation or understanding of the subject.

Dr. Theodore Diller, Pittsburgh: I endorse Dr. Schwab's criticisms. There is a great danger in complexity. We ought to be careful about being overcomplex. We are made fun of, in a way, by our colleagues about our overtechnicality, and there is great danger in all of these things. I doubt very much the value of such an elaborate classification as has been attempted by Dr. Huddleson.

Dr. James H. Huddleson, New York: In referring to Dr. House's criticism, we can say that there are a number of parallel circumstances that apply to military and industrial problems. Of course, the criticism that this paper does not include any observations on the female sex is perfectly correct; also, that it applies to more or less limited age groups among men. That criticism is perfectly justified as well. I agree in every way with Dr. House that stigmas should be mentioned oftener; but this paper is a compilation of the work of thirty-three different neuropsychiatrists, and in the examinations that were made by these men the presence of stigmas was not emphasized; it was rather minimized. Regarding what Dr. Schwab has said, that not much is added to the sum of human knowledge by the work that has been done, he is perfectly correct.

Dr. Schwab: I did not say that at all. I was referring to my own incapacity to understand.

Dr. Huddleson: The only feeling I had in regard to this was that it was a correlation of the findings of different neurologists, and it might be possible to arrive at an average of the different conceptions that were held by these different men. They all were working on the same problem, but from different points of view, as Dr. Schwab has said. It is not intended in any way to be the last word, and it is quite possible that in some ways the terms used are a little more complex than the trait that they are intended to depict. The interpretation of the findings for a given case was the interpretation not of the compiler but rather that of the examiner who made that particular examination, with the idea in the compilation of averaging all these interpretations as far as possible Metatopomania simply means moving from place to place.

CLINICAL TESTS OF THE OVARIAN FOLLICULAR HORMONE *

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The frequent complaints of disturbed menstruation brought to the clinician serve as a constant stimulus to him to seek the fundamental cause for these disturbances In order to evaluate properly the disturbances of menstruation one must first explain the normal periodic changes that occur in the genital organs Up to the present time, explanations of these changes have lacked an extensive foundation of an experimental nature There are, however, many observers keenly interested in the subject in both the laboratory and the clinic From these sources valuable contributions are frequently appearing which bring nearer the final solution of the problem.

That the normal menstrual cycle is largely dependent on ovarian function is well established The ovary cannot be considered alone, however, for evidences of interrelation of the ductless glands are ever present The improved understanding of one gland aids the interpretation of the functions of others The vastness of the work has been well expressed by Dr. Abel [1] "Never before were there so many investigators, chemists, biologists, pathologists and clinicians engaged in one phase or another of this enormous subject. Already the usual output of special articles in this field numbers 3,000 per annum" For obvious reasons, therefore, no attempt will be made to review all the literature.

The isolation of chemically pure substances that represent the active principles of other ductless glands, such as epinephrine, thyroxin, pituitary extract and insulin, stimulates the hope that the ovary will also yield a similar product. The various extracts of the ovary prepared commercially are useful chiefly for their psychic effects. Experimentally, there is little evidence that watery or dried extracts of the ovary are potent The results obtained from extracts made with lipoid solvents have, however, been proved effective in laboratory animals.

Iscovesco,[2] in 1912, used organic solvents to extract a hormone from the ovary which caused a certain amount of growth in the uterus of the rabbit. In 1914, Okintschutz described the arrest of uterine degeneration after double ovariectomy by injections of ovarian extracts. In 1915, Herrmann [4] and Frank and Rosenbloom [5] reported the extraction of a hormone from the placenta and from corpora lutea of domestic animals. They also used growth in the uterus of test rabbits as a criterion of activity. Great emphasis was placed by these [6] and others of the earlier investigators of this problem on the corpus luteum as the principal ovarian source of this hormone, although consistently positive results were not always obtained.[5] In 1922, Frank [7] announced in a single paragraph in a critical review that injections of fresh liquor folliculi produced uterine growth in young rabbits in which the ovaries were still intact (four cases). This was published five years after the work was done. Due credit should be given Frank for these preliminary experiments.

In 1923, Allen and Doisy [8] published a preliminary report of results of injections of fresh liquor folliculi and extracts of liquor folliculi into rats and mice. In these experiments,[9] it was shown that injections of the follicular hormone caused growth in the vagina as well as in the uterus of these animals. A degree of growth equivalent to the maximum occurring in the normal animal was obtained by injections. This growth in the vaginal walls replaced a maximum reaction equal to that in a normal animal under the influence of the ovaries for the partial reaction of earlier workers. This reaction could be easily followed by several observations on the living animal, while formerly criteria of activity of extracts depended on a single observation at necropsy. Furthermore, these tests can be rigidly controlled. The clear cut nature of the end-point of the rat and mouse tests made possible the definition of a quantitative unit for the standardization of extracts and measurement of the amount of active material present in different tissues.[10] A rat unit may be defined as the least amount of lipoid extract required to produce this reaction in the spayed adult rat It was further demonstrated [9] that normal mating reactions occurred in these spayed test animals as a result of injections of the follicular hormone These results were interpreted as a complete substitution with extracts for ovarian endocrine function in nonpregnant rats and mice. In these animals, at least, no endocrine secretion from the corpus luteum seemed necessary

In extending this work, positive tests have been secured with extracts of isolated follicles or follicular contents from hen,[11] cow, pig, sheep and human ovaries. Only negative results were obtained from extracts of comparatively large amounts of corpora lutea of estrus and pregnancy from pigs and cows.[12] For these reasons, the active substance was called the ovarian follicular hormone

Much recent work on this problem has been reported by Brouha and Simonnet,[13] Courrier,[14] Dixon,[15] Frank

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy Seventh Annual Session of the American Medical Association, Dallas, Texas, April, 1926

1. Abel, J J: Some Recent Advances in Our Knowledge of the Ductless Glands, Bull Johns Hopkins Hosp **38**: 1-32 (Jan) 1926

2. Iscovesco, H. Les lipoides de l'ovaire, Compt rend Soc de biol **73**: 16-18, 1912

3. Okintschutz, L: Ueber die gegenseitigen Beziehungen einiger Drüsen mit innerer Sekretion, Arch f Gynak **102**: 333-410, 1914

4 Herrmann, E. Ueber eine wirksame Substanz im Eierstocke und in der Placenta, Monatschr f Geburtsh u Gynäk **41**: 1-50, 1915.

5 Frank, R T, and Rosenbloom, J: Physiologically Active Substances Contained in the Placenta and in the Corpus Luteum, Surg Gynec Obst **21**: 646-649, 1915.

6 With the exception of Okintschutz.

7 Frank R T The Ovary and the Endocrinologist, J. A. M. A. **78** 181-185 (Jan 21) 1922

8 Allen Edgar, and Doisy, E A: An Ovarian Hormone: Preliminary Report on Its Localization, Extraction, Partial Purification and Action in Test Animals J A M A. **81**: 819-821 (Sept 8) 1923

9 Allen, Edgar and others The Hormone of the Ovarian Follicle: Its Localization and Action in Test Animals, and Additional Points Bearing upon the Internal Secretion of the Ovary, Am J. Anat. **31**: 133-182 (Sept) 1924

10 Doisy, E A, Ralls, J O; Allen, Edgar; and Johnston, C G: The Extraction of Some Properties of an Ovarian Hormone, J. Biol Chem. **61**: 711-727 (Oct) 1924

11 Allen L W, Whitsett, J. W.; Hardy, J W., and Kneibert, F. L: The Follicular Hormone of the Hen Ovary, Proc Soc. Exper. Biol & Med **21**: 500-503, 1923-1924

12 Allen and others (footnote 9) Doisy, Ralls, Allen and Johnston (footnote 10) Johnston, C G, and Gould, V. L The Corpus Luteum as the Source of the Follicular Hormone, Surg Gynec Obst **42**: 236-240, 1926

13 Brouha, L, and Simonnet, H: Effects of the Injections of Extracts of Follicular Fluid into Sexually Mature Females, Compt. rend Soc. de biol **93**: 557-558 (Aug 14) 1925

14 Courrier, R Le rythme vaginal du herisson: action de l'injection de liquide folliculaire, Compt rend Soc de biol. **90**: 808-809 (March 28) 1924

15 Dixon, W. E, and Marshall, F H A.: The Influence of the Ovary on the Pituitary Secretion. A Probable Factor in Parturition, J. Physiol. **59**: 276-288, 1924.

and Gustavson and co-authors,[16] Hisaw,[17] Murphy and co-authors,[18] Papanicolaou,[19] Allen, Dupré and Hartman,[20] Ralls, Jordan and Doisy,[21] Shaw,[22] *Seckinger,[23] Laqueur and co-authors,[24]* Steinach and co-authors,[25] and Zondek and co-authors.[26] These investigations are extending our knowledge of the subject so rapidly that no adequate attempt can be made in this paper to review them.

In quantitative measurements of active substance in human genital tissues,[27] a relatively large amount of hormone has been extracted from the placenta at several different periods of gestation. The contents of large follicles and corpora lutea have been removed from the ovary at operation and tested quantitatively as a beginning toward the establishment of the range of hormone secretion during the menstrual cycle. More than 7 rat units of hormone per cubic centimeter were obtained *from follicular contents, as compared with more than* 3.7 and more than 2 rat units per cubic centimeter from groups of several corpora excised at operations during the third and fourth weeks of the menstrual cycle, respectively. The finding of considerable amounts of the follicular hormone in human corpora is in decided contrast to our results from tests of corpora of cows and pigs.[28] This difference in hormone content of corpora is considered a probable causal factor in some of the differences between the menstrual cycle in primates and the estrual cycle in lower animals.[29]

The most striking difference is the occurrence of menstruation in primates, man and monkeys, for in no other animal is such a function found. The outstanding event of the estrous cycle in most mammals other than primates occurs at or near ovulation, while menstruation occurs midway between ovulations. The mating instinct of mammals at times of rut or heat is very intense, and it is sharply limited to a period of a few hours or days. In primates there seems to be no particular relationship between *this instinct and ovulation.* The changes in the external genitalia accompanying rut or heat are very striking in many animals, while in woman these changes are minimal during the varying phases of the cycle. These differences make a direct application of results from laboratory animals to human patients difficult. Therefore, an investigation was begun of the effects of injections of ovarian and placental extracts into monkeys.[30] A typical menstrual cycle occurs in monkeys.[31] In addition to the usual human menstrual phenomena there is marked reddening and swelling of the cutaneous regions surrounding the external genitalia.

A PRELIMINARY NOTE ON EXPERIMENTAL WORK ON MONKEYS

1. Two unfertilized ova[32] have been recovered from the fallopian tubes of two monkeys on the tenth and fourteenth days following the first appearance of the previous menses. Together with an unfertilized tubal ovum and a degenerating uterine ovum recovered by Corner, these quite definitely establish the time of ovulation, if it does occur during the cycle in question, in the latter half of the second week of the menstrual cycle. There is ample evidence that ovulation does not occur during many apparently normal cycles.

2. Removal of both ovaries or injury to large follicles[33] immediately after, or toward the end of, the follicular phase of the cycle was followed by apparently typical menstrual bleeding. These operative menses began on the fourth to the sixth day following the removal of ovarian hormonal influence. Reddening and swelling of the vulva and surrounding regions disappeared after double ovariectomy.

3. Thirteen series of injections of ovarian and placental extracts have been completed in five spayed monkeys.[34] From 64 to 190 rat units of hormone have been injected over intervals varying from nine to twenty days, two or three injections being given daily to insure nearly continuous action of the extracts. Typical reddening and swelling of the vulva and surrounding regions and reddening of the nipples have been induced. *Disappearance of leukocytes and growth of the vaginal* epithelium to the point of cornification have been indicated by smears of vaginal contents. Considerable growth has been induced in the uterus. In seven of ten series, bleeding followed discontinuance of injections in from three to seven days. The duration of these experimental menses varied from one to six days. The flow was scant but characteristic. No bleeding occurred during the period of injections, and none followed three series in an animal from which the uterus had been removed.

Histologic studies of the genital tissues involved and physiologic studies of contractions of the tubes are under way to check these results further.

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[16] Frank, R T, and Gustavson, R G: The Female Sex Hormone and the Gestational Gland, J A. M A. **84:** 1715 1719 (June 6) 1925. Frank, R T, and others: Demonstration of the Female Sex Hormone in the Circulating Blood· Preliminary Report, ibid **85:** 510 (Aug 15) 1925

[17] Hisaw, F L· The Influence of the Ovary on the Resorption of the Pubic Bones of the Pocket Gopher, Geomys Bursarius (Shaw) J Exper Zool **42:** 411, 1925

[18] Murphy, H S, and others Oestrous Cycle in the Domestic Cow (Bos Taurus) and the Effect of Ovarian Extracts (Sixth Report), J A. Vet M A, August, 1925 Case Reports on the Use of the Oestrual Hormone and Other Gland Extracts in the Treatment of Functional Sterility, ibid **68,** 1926

[19] Papanicolaou, G N· The Production of Certain Distinct Types of Reactions by the Use of Ovarian Extracts, Proc Soc. Exper. Biol & Med **22:** 106 108, 1924

[20] Allen, Edgar; Dupré, C, and Hartman, C· Effect of Placental and Follicular Extract upon the Phenomena of Oestrus, with Special Reference to the Mammary Glands (Opossum) Anat Rec **32:** 226, 1926

[21] Ralls, J O; Jordan, C N, and Doisy, E A: A Simplified Method of Preparation of the Ovarian Hormone and Some Properties of the Purified Product, to be published

[22] Shaw, W. The Relation of Ovarian Function to Menstruation, J Physiol **60:** 193 207 (July) 1925

[23] Seckinger, D L: The Effect of Ovarian Extracts upon Spontaneous Contractions of the Fallopian Tube of the Domestic Pig with Reference to the Oestrous Cycle, Am. J. Physiol **70:** 538 548 (Nov) 1924

[24] Laqueur, E, and others· Ueber das Hormon des östrischen Zyklus II, Deutsche med Wchnschr. **52:** 4 6; 52 55, 1926

[25] Steinach, E, Henlein, H, and Wiesner, B P Auslösung des Sexualzyklus, Entwicklung der Geschechtsmerkmale, reaktivierende Wirkung auf den senilen weiblichen Organismus durch Ovar und Placentaextrakt, Arch f d ges Physiol **210:** 598 611, 1925

[26] Zondek, B: Experimentelle Untersuchungen über den Wert der Organotherapie, Ztschr f. Geburtsh u Gynäk **86:** 238 277 (July) 1923. Zondek, B, and Aschheim, S: Experimentelle Untersuchungen uber die Funktion und das Hormon des Ovariums, Arch f Gynäk **127:** 250 292, 1925 Zondek, B, and Brahn, B· Ueber Darstellung des Ovarialhormons in wassriger Lösung, Klin Wchnschr **4:** 2445 2446, 1925. Zondek, B, and Bernhardt, H: Biologische Prüfung von Ovarialpraparaten, ibid **4:** 2001 2005, 1925

[27] Allen, Edgar; Pratt, J. P, and Doisy, E A The Ovarian Follicular Hormone Its Distribution in Human Genital Tissue, J. A M A **85:** 399 405 (Aug 8) 1925

[28] This material furnished the source from which commercial extracts are prepared Recently Frank and Gustavson have confirmed Frank's earlier occasional finding of active material in the corpora lutea of these animals This seems possible if the corpora were excised from ovaries also containing large follicles, especially if the ovaries were not fresh

[29] Allen, Edgar The Ovarian Follicular Hormone A Study of Variation in Pig, Cow and Human Ovaries, Proc Soc Exper. Biol. & Med. **23:** 383 387, 1926

[30] This work has been assisted by a grant from the Committee for Research on Sex Problems of the National Research Council

[31] Heape, W: The Menstruation of Semnopithecus Entellus, Phil Tr. London **185:** 411-471, 1894, The Menstruation and Ovulation of Macacus Rhesus, with Observations on the Changes Undergone by the Discharged Follicle, ibid **188:** 135 166, 1897. Van Herwerden, M.: Beitrag zur Kenntnis des menstruellen Cyklus, Monatschr. f. Geburtsh. u Gynäk. **24:** 730 748, 1906 Corner, G. W.: Oestrus Ovulation and Menstruation, Physiol Rev. **3:** 457 482 (Oct) 1923

[32] Allen, Edgar: The Time of Ovulation in the Menstrual Cycle of the Monkey Macacus Rhesus, Proc Soc Exper. Biol & Med. **23:** 381-383, 1926

[33] Allen, Edgar: The Menstrual Cycle in the Monkey: Effect of Double Ovariectomy and Injury to Large Follicles, Proc. Soc. Exper. Biol & Med **23:** 434 436, 1926

[34] Allen, Edgar: Progress of Work on the Mechanism of the Menstrual Cycle of the Monkey Macacus Rhesus, Anat. Rec. **33:** 226, 1926.

From these experiments, combined with earlier ones in lower mammals, we are inclined to conclude tentatively as a basis for clinical tests that:

1. The ovarian follicular hormone starts the periodic growth processes in the female genital tract.
2. In case ovulation occurs, the corpus luteum in woman,[35] and perhaps in other primates, may continue this anabolic endocrine influence, which probably decreases as the next menses approach.
3. Menstruation seems to be partly due to the temporary absence of this secretion after it has been acting for a certain time.
4. But since ovulation followed by corpus luteum formation often does not occur, a specific secretion of the corpus luteum is not a necessary causal factor in the menstrual cycle. That the corpus luteum may possibly have a regulatory influence is not questioned.
5. This substance or a very similar one is probably secreted by, or stored in, the placenta. Its continuous availability throughout the gestation period would account for the absence of menstruation during pregnancy.

CLINICAL TESTS

Material Injected.—The ovarian follicular hormone injected into patients represented two kinds of preparations. Both were begun by extracting follicular fluid with lipoid solvents. One was a watery emulsion,[36] the other an oil solution of residues. The potency of these extracts was tested before their clinical use by injections into spayed rats. The strength varied from about 0.5 to 3.7 rat units per cubic centimeter. This material was injected subcutaneously in the deltoid region. No unpleasant reactions either local or general were experienced, with the exception of a transient burning sensation by watery emulsions at the site of the injection. The oil solution did not seem to call forth any local reactions, such as subcutaneous lumps.

In testing the effect of the follicular fluid in animals, the conditions necessary for satisfactory proof can be readily controlled. The animals selected can be of a suitable age, free from complicating disease, and the conditions of the experiment can be varied to suit the requirements. The difficulties are increased when these tests are applied to the human being. 1. There must be the cooperation of the patient.[37] 2. There must be no complicating disease. 3. The patient's build must be such that a satisfactory pelvic examination can be made without an anesthetic. 4. The conditions cannot be varied to suit the problem, but the material must be chosen from the rank and file of patients.

Although as indicated above, there are many differences between the menstrual cycle of primates and the estrous cycle of other animals, there is one thing common to all, and that is the periodic growth and regression of the uterus in response to stimulation from the ovaries. In primates this regression is accompanied by the menstrual flow, in other mammals it is not.

In order to test the action of the follicular hormone on the human cycle, suitable individuals have been selected from time to time. The experimental nature of the work has been carefully explained to them. This has secured their cooperation to the extent that several have made trips to the hospital from a considerable distance twice a day. Some patients have felt benefited to such an extent that they have returned to ask a continuation of the treatment. Others have noted no improvement and have discontinued treatment before satisfactory conclusions could be arrived at.

Since the main problem has been to substitute extracts for diminished or absent ovarian secretion, an attempt has been made to exclude complicating diseases or disturbances of the other ductless glands. Out of many cases that have been considered, the following groups have been chosen: 1. Artificial menopause. 2. Natural menopause. 3. Primary amenorrhea. 4. Scanty menstruation. 5. Immaturity.

Artificial Menopause.—The condition that most closely simulates the animal experiments is the artificial menopause following removal of ovaries with the uterus intact. The following case report typifies this group:

Mrs. I. D., aged 36, had had four pregnancies. The menstrual cycle was regular, twenty-eight days, until both ovaries were removed one year previous to the injections. There had been no menstruation since the operation. There had been some nervousness and recurrent hot flashes. She also complained of painful breasts. A series of two injections a day for twenty-three days was given. Each dose represented 0.5 rat unit. After the third day the patient noted some feelings of pressure in the pelvis. This feeling of pressure gradually increased throughout the series of injections. There was also a very evident change in the circulation of the uterus, as on inspection before the injections were begun the cervix was small, atrophic and pale, but as the injections proceeded the color of the cervix changed as the circulation improved, becoming red to purplish. Also on inspection the size of the cervix was noted to increase. With bimanual palpation the fundus was found to enlarge until the end of the injections, at which time it seemed nearly twice the size that it was before the injections were begun. As the fundus enlarged the patient stated that she felt the same symptoms that she formerly experienced as menstruation was approaching, a sense of pressure particularly noticeable on the left side and also in the bladder. The objective symptoms of enlargement were unquestionable. It is quite probable that one should discount some of the subjective symptoms, as the patient was somewhat nervous and was probably unduly impressed by the sensation of returning menstruation. She even mentioned that on the seventeenth day of injections she noted certain nervousness and forgetfulness which almost amounted to mental confusion, which she then recalled had been present with each menstruation for the four or five years preceding the operation that brought about the menopause. Also she noted an increased tenderness in the mammary glands, which often occurred previously with former menstruations.

The consistency of the uterus when the injections were begun was very firm. As the enlargement proceeded, there was some softening. At no time was there any flow. The patient was very slight and bimanual examination easily accomplished, so that we feel an estimate of the change in the size of the uterus is quite fair even though no absolute measurements could be made. This increase in the size of the uterus was checked by disinterested observers.

Five series of injections in women with artificial menopause have been made. All these patients have been in the third decade of life. The interval between the removal of the ovaries and the injection has varied from two months to two years. In each case, examination of the patient before the injection has shown atrophy or involution of the uterus which follows loss of the ovaries. The dosage used has been from 0.5 to 3 rat units morning and evening daily for two or three weeks. The results obtained in this group have been fairly uniform:

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[35] Allen, Pratt and Doisy (footnote 27). Footnote 28.

[36] This material was supplied by Parke, Davis & Company.

[37] In the summer of 1923 preliminary clinical tests of solutions of hormone in oil were begun by the junior author in collaboration with Dr. O. L. Newell of the gynecologic clinic at Washington University School of Medicine. Injections were begun in seven different patients. Only two of the seven were willing to continue treatment to the point at which results seemed worth while. Daily injections over a period of two weeks in summer time become tiresome, especially when the malady is not fatal. Because of the subjective nature of much of the evidence these preliminary results were not published. Later more thorough work has supplied better evidence establishing most of the results of these preliminary tests.

Objective Criteria Noted: A few days after the injections were begun, an increase in the size of the uterus was noted. This growth continued for several days. During the latter days of the injections over the period of from two to three weeks, the rapidity of the growth was less noticeable. As soon as the injections were stopped the uterus diminished in size, returning in a few days to the size noted before the injections were begun. At the height of growth there was some change of color in the cervix seen through the vaginal speculum, the cervix showing a definite increase in the amount of circulation. On two different occasions following the cessation of the injections, a very small streak of blood appeared. Because of the momentary duration of this, we hesitate to call it menstruation. The growth was determined by bimanual pelvic examinations.

Subjective Criteria: The patients noted also the increase in the size of the uterus because they all mentioned the feeling of pressure and heaviness in the pelvis which they had formerly experienced, especially at the time of menstruation. Many other subjective symptoms were noted, but these must be greatly discounted on account of the patient's desire to have the symptoms reproduced.

Natural Menopause.—The outstanding features associated with a natural menopause are the "hot flashes" and nervousness. Since these are subjective symptoms, they do not offer an especially good test for the effects of the follicular hormone. However, it seemed advisable to try a certain number of cases of this sort for the sake of comparison with the other types of ovarian disturbance. Several patients of this group have been treated with injections. All of them have reported improvement in both the nervousness and the hot flashes. The following case report typifies this group:

Mrs. K. D., aged 47, had had symptoms of hot flashes, nervousness, and pains in the breast for somewhat more than a year, the hot flashes occurring about five in twenty-four hours. After five daily injections of follicular fluid containing about 0.5 rat unit each, the patient noticed a diminution in intensity of the hot flashes and also some improvement in the painful breasts. With the next five doses there was a distinct decrease in the intensity and in the number of the hot flashes, and there was also experienced an improvement in the condition of the breasts and general nervousness. At this time daily doses were given over a period of a week which had no potency, this fact being discovered later. The patient complained during this week that her old symptoms had returned. As soon as the discovery was made that the injections were impotent, the change was made to a known solution containing 0.5 rat unit for each injection. Within a few days the hot flashes disappeared and the patient's general condition improved. With the cessation of treatments at the end of three weeks, the hot flashes gradually reappeared; but in a period of four months they have not returned to the same frequency or intensity that they were before the injections were begun.

It must be remembered in interpretation of the influence of the hormone in cases of natural menopause that all the symptoms considered are subjective. In addition to the case cited above, several other patients were given these follicular injections. It was found that it did not require a very high dosage to modify the symptoms in this group of patients.

Primary Amenorrhea.—The third group of persons in whom the injections were tried may be spoken of as having a primary amenorrhea, that is, they have passed the age of 20 without yet having menstruated. While it is impossible to separate the influence of various ductless glands, as far as could be determined, we have excluded those that show a definite hypofunction of either the thyroid or the pituitary. The basal metabolism has been normal. These subjects have all been hard to check on account of the lack of development of the pelvic organs, making an accurate pelvic examination somewhat difficult. In this group of cases there have been five series of injections varying from two weeks to two months, once a day to three times a day. The total number of rat units varied from 15 to 90. In this group there has been a definite but slight amount of growth with the larger doses, but no sign of menstruation in any case. No subjective symptoms were noted.

Scanty Menstruation.—In this group there have been six series of injections. The patients chosen have been in the second or third decade. In all of them the menstruation had been irregular either in interval or in amount since its onset. One of these cases is of unusual interest in that two years previous to the present study she had been given thyroid extract by mouth with resulting increased frequency of menstruation, but in very scant amount. The following case typifies this group:

Miss A. C., aged 31, started to menstruate at the age of 13. She was irregular from the start. The average interval was two months, and the duration never over three days. This continued until the age of 18, at which time the menstrual periods became more irregular with gradually diminishing amount at each flow. At the age of 27 the average flow was about three or four times a year. At this time the patient was given thyroid extract by mouth over a period of many weeks. During this therapy she came to menstruate every month for a period of six months, but with no particular increase in the amount. The thyroid extract was discontinued. The menstruation again became irregular. The year preceding the present series of injections, the patient had menstruated twice. She was given one injection a day of 1 rat unit for five days. Following this she flowed about twice as much as at the previous period some eight months before. The injections were begun again about twelve days after the menstrual flow was established. Following injections of the fluid for eleven days, the flow was reestablished. There was a slight increase in amount over the one previous. The injections were then discontinued for another twelve days and begun again and at the same interval the menstrual flow appeared. This flow was, as the patient stated, "the most like what I have heard other people say was a normal menstruation—more than I have ever menstruated at one time in my life."

This patient is of especial interest on account of the menstruation having been apparently influenced by thyroid extract and at a later date by the follicular hormone, showing the possibilities of interrelation of the ductless glands. The conditions found in this patient do not meet ideal experimental conditions in that ovaries of some sort are still present in the subject. However, there seems to be a very direct cause and effect. Further study will be necessary in this particular case to check the influence the hormone may exert.

Immaturity.—In the animal experiments, one of the striking tests has been the hastening of sexual maturity so that the estrous cycle becomes established much earlier in injected animals than in controls. There has been no justification in human beings to reproduce this test in normal persons.

SUMMARY

Injections of ovarian follicular hormone into primates, monkeys and human beings, from which ovaries

have been previously removed, produce growth in the uterus.

Removal of the ovarian follicular hormone by oophorectomy or cessation of injections brings on menstruation in monkeys.

Uterine growth and accompanying subjective symptoms similar to those previously experienced at time of menstruation have resulted from injections into patients whose ovaries have been previously removed. No bleeding approximating that of normal menstruation has as yet appeared in women.

In one case of scanty and irregular menses in which the ovaries were still intact, a definite increase in flow and regularity has resulted from injections of the hormone.

ABSTRACT OF DISCUSSION

Dr. Arthur H. Curtis, Chicago: I should like to know the technic employed in the preparation of the hormone.

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Dr. J. P. Pratt, Detroit: The preparation of the ovarian follicular hormone has been given in detail elsewhere. For this reason details have been omitted in this paper. The hormone may be extracted from the ovarian follicles, human corpus luteum or placenta. It has been sufficiently purified for injection into human beings without the slightest reaction. Some patients have had a series of at least twenty-four injections in one location without any reaction. The dosage used has been small. It is hoped that the hormone will be later available for clinical use. It is desirable, for this reason, to determine the minimum dosage necessary as the preparation is still an expensive process. There has been some difficulty, up to the present time, in concentrating the hormone so that larger doses can be given without necessitating the injection of a large amount of fluid. So far only doses of 1 cc. of fluid have been used. Now that the concentration has been increased, the reactions are more prompt and more striking. It is quite possible that other results will appear with the injection of larger doses.

Tuberculin Prepared from Nonprotein Substrates.—It has been shown for the first time that small amounts of tuberculin fractions prepared from protein-free synthetic substrates are capable of sensitizing normal, nontuberculous guinea-pigs. In these animals, typical skin reactions can be elicited subsequently by intracutaneous injection of minute amounts of homologous as well as heterologous fractions and of unfractionated tuberculin from which such fractions have been prepared. Clinical trial of these fractions in juvenile patients has demonstrated for the first time that the substances have diagnostic value. Positive skin tests were perfectly correlated with positive clinical and laboratory findings of tuberculous infection. Such was not the case for ordinary old tuberculin in more than 20 per cent of young patients in a group of 150 who were studied routinely. In a number of instances the observations suggested that the reactions might be correlated with the degree of activity or with arrested tuberculous infection. These studies point to a method which makes an accurately standardized tuberculin available for routine clinical work. It is believed that the active principle of tuberculin can best be isolated by this or by a similar method. The observations on sensitization suggest that these may be applied to studies of immunity, and by extension, to therapeutic studies in the experimental animal. Such work, now in its third year of progress, will be reported in the future.—Eberson, Frederick: *Proc. Soc. Exper. Biol & Med.* **23**:511 (March) 1926.

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The first person to perform periarterial sympathectomy was Jaboulay,[2] who in 1889 removed the periarterial tissues from the femoral artery for the cure of certain perforating ulcers of the foot. The operation lapsed into obscurity until 1913, when Leriche [3] published an article on the removal and sectioning of the perivascular nerves in certain painful syndromes of arterial origin and in some trophic disturbances. Since this first paper, he has contributed many articles reporting his results with this operation in the treatment of various disorders of supposedly neurovascular origin.

In 1921, Leriche [4] described the effects of the operation, reviewed his observations and researches, and reported the results in sixty-four cases in which operation had been performed. This seemed to fire the imagination of surgeons everywhere, with the result that one now finds surgeons performing the operation for the most bizarre group of vascular disturbances. Leriche at various times has suggested its applicability in the treatment of Raynaud's disease, erythromelalgia, causalgia, trophedema, trophic ulcers, painful amputation stumps, ischemic sequelae, varicose ulcers, varicose eczema, intermittent claudication, thrombo-angiitis obliterans and disorders of the Babinski-Froment type. Recently there has been added to this somewhat related group such conditions as ununited fractures,[5] acute infections of the extremities,[6] tuberculous lesions of bone,[7] leprosy,[8] acute osteomyelitis [9] and pelvic disturbances in the female.[10] Anatomically, the field extends over practically every approachable vessel where denudation is practiced for the relief of local or neighboring pathologic conditions.

Publications dealing with the anatomy and physiology, case reports and modifications of technic of the operation have been appearing in considerable number both here and abroad. These writers have varied so widely in their results and have expressed such divergent views relative to the procedure that one feels it may be timely to attempt a critical review in tabloid form of the field, that the results of this operation may be properly interpreted and evaluated.

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[4] Leriche, R.: Periarterial Sympathectomy, Ann. Surg. **74**: 385 (Jan.) 1921.

[5] Kappis, M.: Periarterial Sympathectomy, Klin. Wchnschr. **2**: 1441 (July 30) 1923.

[6] Rubaschow, S.: Periarterial Sympathectomy in Delayed Union, Zentralbl. f. Chir. **52**: 635 (March 21) 1925.

[7] Lawen, A.: Sympathectomy in Tuberculosis of Extremities, München. med. Wchnschr. **71**: 191 (Feb. 15) 1924.

[8] Black, K.: Treatment of Chronic Ulcers by Periarterial Sympathectomy, Brit. M. J. **2**: 165 (Aug. 2) 1924.

[9] Ahrens, R.: Periarterial Sympathicolysis, Zentralbl. f. Chir. **52**: 11 (Jan. 3) 1925.

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It is quite essential to establish first what is known of the anatomy and physiology of the portion of the sympathetic nervous system related to this operation. Further, it is hoped that this knowledge may serve to explain the clinical phenomena that follow the application of periarterial sympathectomy to peripheral vessels.

The operation was originally designed principally for an attack on those sympathetic dysfunctions of the vasomotor system which showed a predominance of vasoconstrictor action. Later the field of application was broadened to include conditions that might be benefited by active hyperemia which it was hoped could be brought about by a diminution in the normal vasoconstrictor tonus or by stimulation of the vasodilator elements.

The technic of the operation as practiced by most men consists in the isolation of a peripheral artery over a distance of from 8 to 10 cm. The vascular sheath or adventitia is divided longitudinally, and is then circumferentially dissected to effect a complete adventitial denudation of this sector of the vessel.

Following the stripping of the periarterial sheath there occur the following reactions, which appear quite constant and which most observers have been able to demonstrate to a greater or lesser degree, depending on the condition of the vessel and the manner and completeness of the operation: At the site of vascular denudation there occurs a primary contraction, which may reduce the vessel to one-third or even one-fourth its normal size. The pulse may disappear, but there is usually no interruption of the circulation. Following this initial contraction, in from three to fifteen hours there occurs a dilatation of the artery and a hyperemic condition of the extremity, with an increase of from 2 to 3 degrees of temperature, a feeling of warmth in the extremity, an increase in blood pressure, and dilatation of the capillary loops. This period of hyperemia lasts from a few days to several weeks.

While Leriche laid great stress on the completeness of the perivascular denudation over a considerable length of the vessel, other men have reported quite similar reactions following modifications of his technic. Novak [11] secured results from merely laying open the sheath of the vessel and freeing any adhesions in its circumference. Ahrens [12] has recently advised a blunt circumferential loosening of the adventitia for a distance of 1 or 1.5 cm. The sheath is left attached at both ends. This procedure he terms "sympathicolysis." Handley [13] has suggested injection of alcohol at points equally distant on the circumference of the vessel. He states that with the exception of the primary contraction locally of the vessel all other reactions are similar to neurectomy.

The reactions that are found to occur have been explained by Leriche, Hohlbaum,[14] Kappis,[15] Brüning [16] and others, as follows: The primary contraction at the site of operation has been explained as due to the excitation by trauma of the vasoconstrictor fibers at the site of operation. The secondary phenomena have been explained as being due to the interruption of the paths of the vasomotor fibers which were thought to pass from their origins in the dorsolumbar outflow of the ganglionated cord principally as a network in continuity along the vessels of the extremity. This interruption of the postganglionic fibers was meant to remove the preponderance of vasoconstrictor tonus. It was also believed that any long sensory paths which might reflexly influence the tonus of the vessels or which might in themselves carry painful sensations could likewise be interrupted.

While we may agree that the primary contraction and secondary phenomena occur in a more or less pronounced form in the majority of. cases, there still remain many incongruities in the explanation that they result essentially from interruption of long vasomotor tracts supplying the peripheral vessels. It is agreed that these phenomena are frequently transient, and this evanescence would speak very strongly against the basis of the reactions depending on any decided anatomic interruption of vasomotor nerve paths. Further, experimental investigation shows that the arrangement of vasomotor nerves to the blood vessels is in a segmental manner and cannot be interrupted except locally by the operation as now performed.

The classic experiment of Claude Bernard [17] first suggested the segmental distribution of vasomotor nerves. Recently Kramer and Todd [18] have shown that the vessels of the upper extremity receive their sympathetic fibers in a segmental distribution from special nerve trunks. The nerve twigs are distributed from the nerve trunks to the vessels at intervals, the intervals growing shorter as the more distal portions of the limb are reached. This distribution to the vessels corresponds pretty closely with the distribution of nerves to the skin and musculature of the same area.

Potts [19] investigated the distribution of the nerve supply to the arteries of the lower extremities. He also found a segmental distribution of nerves to the vessels similar to the findings in the upper extremity. This segmental distribution through peripheral nerves is corroborated by many experiments conducted along the lines of physiologic investigation.

Langley [20] showed that the normal response of the vasomotor nerves to stimulation is a vasoconstriction in the area supplied by the nerve. He also showed that stimulation of the lumbar sympathetics causes a vasoconstriction that is abolished when the peripheral nerves are cut.

Before further experiments dealing with the physiology of vasomotor activity are discussed, we may find it expedient to quote from Bayliss [21] a survey of those factors which control the normal state of blood vessel tonus. He states that the tonus is due to the natural property of smooth muscle to be in a state of tonus and to the continuous vasoconstrictor impulses sent out by the tonic excitation of the vasocontrictor center. Other factors are the contractions set up by epinephrine when have been previously removed, produce growth in the uterus.

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[11] Novak, V.: Periarterial Sympathectomy, Cas. lék. česk. **64**: 1528 (Oct. 17) 1925.

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[15] Kappis, M.: Periarterial Sympathectomy, Klin. Wchnschr. **2**: 1441 (July 30) 1923.

[16] Brüning, F.: Trophic Functions of the Sympathetic Nervous System, Klin. Wchnschr. **2**: 67 (Jan. 8) 1923.

[17] Bernard, Claude: Lessons on the Physiology and Pathology of the Nervous System, **2**: 508, 1868.

[18] Kramer, J. G., and Todd, T. W.: Distribution of Nerves to the Arteries of the Arm, Anat. Record **8**: 243 (May) 1914.

[19] Potts, L. W.: The Distribution of Nerves to the Arteries of the Leg, Anat. Anz. **47**: 138, 1914.

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[20] Langley, J. N.: The Vascular Dilatation Caused by Sympathectomy and the Course of the Vasomotor Nerves, J. Physiol. **58**: 70 (Oct.) 1923.

[21] Bayliss, W. M.: Principles of Physiology, London, Longmans, Green & Co., 1924, p. 704.

Of these several factors, we are especially concerned with the continuous vasoconstrictor impulse which is the variable by whose modified activity it was hoped the caliber of peripheral vessels could be influenced, the point of attack having been principally directed to the interruption of the efferent fibers, thereby removing the control of the vasoconstrictor center over the peripheral vessels. The futility of securing interruption of any considerable number of fibers by removal of a segment of vessel sheath has been shown by Milko,[22] Schilf [23] and others, who secured no change in the blood flow in the extremity of a dog when the sheath of the femoral artery was stimulated Wiedhopf [24] likewise found no plethysmographic changes in the foot of a dog following periarterial sympathectomy. Melzner [25] removed the perivascular sheath of the renal artery of a dog and found no histologic differences between the kidney that had been operated on and the kidney that had not Bowing [26] showed that vasomotor reflexes are maintained after sympathectomy but are abolished when the peripheral nerves are cut.

With the accumulation of evidence that the effects of this operation are not due to interruption of the efferent tracts, it is suggested by Bruning [27] that they are due to interruption of afferent tracts which are likewise supposed to travel in the periarterial sheaths of peripheral blood vessels Andre Thomas,[28] as early as 1917, suggested that deep sensations were transmitted in the nerves traveling in the vessel sheath This explanation seemed plausible and helped to explain the disappearance of pain which has been noted frequently in patients who have been operated on The experimental work of Friedrich [29] seemed to support this view, but the researches of Dennig,[30] who duplicated the work of Friedrich under better controlled conditions, demonstrates that no long vasodilator fibers nor long sensory paths travel in the adventitia of peripheral vessels Wiedhopf's [31] researches seem to support the work of Dennig.

Another explanation has been offered for the hyperemia that follows operations on an extremity It is fairly well known that stimulation of a sensory or mixed nerve produces a very decided vasomotor change in an extremity. In 1866, Loven [32] showed that stimulation of the great auricular nerve of a rabbit produces vasodilatation in the rabbit's ear. He also showed that stimulation of the anterior crural nerve of a dog produces local dilatation of blood vessels of the extremity, with vasoconstriction elsewhere and an increase in general blood pressure These experiments speak for active vasodilator nerves which receive their impulses as a reflex through the dorsal root sensory fibers, or it is possible that they may be antidromal in type, corresponding in many ways to the "axon reflex" described by Langley.

Lawen [33] stretched the sciatic and saphenous nerves in an elderly patient as a remedy for arteriosclerosis and hypothermia of the foot. He produced a hyperthermia with some motor paralysis. Capillary microscopy showed dilated capillaries in the toes of the operated side. It is possible that in this case the results may be attributed to reflex stimulation of the vasodilator fibers or to interruption of the vasoconstrictor fibers passing to the periphery in the peripheral nerve.

Mosser and Taylor,[34] as a result of their experiments, conclude that periarterial sympathectomy in dogs and cats has uniformly failed to produce hyperthermia. However, alcoholic injection of the sciatic nerve in sufficient strength to produce motor paralysis has resulted, in a constant hyperthermia.

The conclusions that one must draw from the foregoing discussion are that we have no proof that either the long vasomotor tracts or the long sensory tracts travel in the adventitia of the blood vessels. That there are vasomotor and possibly some sensory changes following the operation, there can be little doubt. We are not, however, justified in attributing these reactions to any specific attack made on the sympathetic fibers coursing in the sheaths of blood vessels. This position can be supported by experimental work and by the appearance of similar reactions to operative procedures which in no way approximate a thorough neurectomy of perivascular fibers. Furthermore, one must be critical in interpreting results. In some cases of trophic ulcers of both extremities, sympathectomy on one limb has been followed by beneficial results to both limbs. Similar results have occurred in Raynaud's disease when operation on one limb has been followed by bilateral improvement [35] It may be ventured in the light of our present knowledge that many of the clinical phenomena may be attributed to the enforced rest in bed, while other results may follow the beneficial effects of the reactive hyperemia of inflammation produced by local trauma and subsequent wound healing. Relief or diminution of pain may in some instances be due to interference with the conductivity of sensory nerves. Again, this temporary diminution of pain may lead to increased physiologic activity of voluntary muscles which is accompanied by active hyperemia. Psychic effects must be taken into account in a final analysis, and some benefit may be derived from the voluntary activity induced by the patient's desire to show improvement.

In spite of the fact that there are few diseases wherein pure or relatively pure vasomotor disturbances can be demonstrated, there is a real service to be rendered by the neurologist and surgeon in establishing a successful plan of attack on these vasomotor dysfunctions.

The clinical results of the present operation have been far from satisfactory. We may explain many failures as due to the lack of knowledge of the exact pathogenesis of many conditions for which the operation has been performed. In some instances the pathologic condition present has been such that it would seem impossible to produce marked physiologic reaction by any operation. In such vascular diseases as thrombo-angiitis obliterans, the essential pathologic condition consists of well marked organic changes, with organization of the thrombus occluding the vessel lumen. Likewise, it is not reasonable to expect any change in such organic diseases as primary or secondary arteriosclerosis. While these two conditions represent the extreme degree of organic disease of blood vessels, they serve as examples of the extreme demands made on this operation. In such conditions as causalgia, in which the pathogenesis is still in doubt and the condition seems to run a self limited course, it does not seem wise to attack the blood vessels. Lewis and Gatewood [36] have shown excellent results in these cases by injecting the peripheral nerve with 60 per cent alcohol. Recently, Taylor and Rice [37] have advocated the injection of the sciatic nerve with alcohol as a substitute for periarterial sympathectomy of the femoral or popliteal vessels.

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[22] Milko, W: Physiology of Periarterial Sympathectomy, Zentralbl f Chir, March, 1924, p 51.

[23] Schilf E Physiology of Periarterial Sympathectomy, Klin Wchnschr **3**: 346 (Feb 26) 1924

[24] Wiedhopf, O Action of Periarterial Sympathectomy, Beitr z klin Chir **130**: 399, 1923

[25] Melzner, E: Periarterial Sympathectomy, Arch f. klin. Chir. **136**: 427 (July 25) 1925

[26] Bowing, H Plethysmographic Study of Vasomotor Reflexes After Sympathectomy and After Blocking of Peripheral Nerves, Mitt a d. Grenzgeb d Med u Chir **38**: 210, 1924

[27] Bruning, F: Spasm of Arteries in Pathogenesis of Vasomotor Disturbances, Deutsche med Wchnschr **48**: 1572 (Nov. 24) 1922, and other papers by the same author

[28] Thomas, Andre Compt. rend Soc. de biol, 1917

[29] Friedrich, H Phenomena Following Sympathectomy, Klin Wchnschr. **3**: 2035 (Nov 4) 1924

[30] Dennig, H Periarterial Nerves and Sensory Paths, Klin Wchnschr **4**: 66 (Jan 8) 1925

[31] Wiedhopf, O Paths of Nerves of Vessels of Extremity and Their Action in Periarterial Sympathectomy, Munchen med Wchnschr. **72**: 413 (May 13) 1925

[32] Loven, cited by Bayliss, W M: Principles of Physiology, London, Longmans, Green & Co, 1924, p 700

[33] Lawen, A: Treatment of Painful Arteriosclerosis by Stretching of Nerves, Munchen med Wchnschr. **69**, March, 1922; Zentralbl. f. Chir. **50**, September, 1923

[34] Mosser, W. B, and Taylor, K P A: Effect of the Sympathetic Nervous System on the Peripheral Vascular System, Arch. Surg **12**: 760 (March) 1926

[35] Leriche, R: Ref med **40**: 1105 (Nov. 24) 1924 Kummel, H: Experiences in Sympathectomy, Zentralbl f Chir. **50**: 1434 (Sept 22) 1923 Petruscu, G: Periarterial Sympathectomy, Lyon chir. **21**: 449 (Aug) 1924.

In reviewing the literature, one is constantly reminded that the enthusiasm of the authors for the operation is not borne out by a critical analysis of their case reports. Too often the authors wax eloquent over the early improvement shown and trail off with an apologetic addendum that the apparent cure was only transient [38] This is particularly apparent in the reports of chronic ulcers, which show remarkable improvement during the hyperemic phase, but tend to recur with the subsidence of this reaction.[39]

Brandenburg [40] collected statistics from eight German surgeons reporting 103 cases. He states that although the majority of patients are benefited for a while, permanent good results are rare.

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Winslow [43] reports three cases of thrombo-angiitis and one case of Raynaud's disease in which failure followed operation. I have performed the operation twenty-two times in twenty patients: In ten cases of thrombo-angiitis obliterans, one case bilateral; in seven cases of arteriosclerotic gangrene, one case bilateral; and one case each of Raynaud's disease, diabetic gangrene and chronic ulcer of the leg. Temporary improvement was noted in a considerable number, but relapse occurred in all except three, which showed but slight improvement. In a previous article [44] I have reported the use of sympathectomy with concomitant main vein ligation.

The recent visit of Royle and Hunter to this country stimulated renewed interest in surgery of the sympathetic nervous system, and several surgeons have followed their technic for ramisectomy and ganglionectomy with the idea of attacking the vasomotor fibers before their distribution in the peripheral vessels. Adson and Brown [45] have suggested that relief of vasomotor disturbances may be brought about by permanently depressing or destroying the overactive vasoconstrictor influences of the acral arterioles. This result, they believe, can be brought about in the lower extremity by lumbar sympathectomy This newer attack seems to have a more logical foundation than perivascular sympathectomy However, the gravity of the operative procedure itself, as described by Royle [46] and modified by Adson,[47] will be an enormous obstacle to its general adoption as surgical therapy

Periarterial sympathectomy has always been spoken of as a comparatively simple procedure, but there have appeared innumerable references to mishaps occurring during or following its performance Such accidents as wound infection,[48] perforation of the artery,[49] secondary hemorrhages,[50] false aneurysm,[51] thrombosis of the artery [52] and gangrene of the extremity [53] have been rather frequent

Even though we are compelled to admit that perivascular sympathectomy has not fulfilled the promises that seemed so alluring when it was first suggested, nevertheless, it has served a useful purpose in stimulating wide interest in the sympathetic nervous system and awakening the surgical profession to the possibilities in neurovascular surgery.

CONCLUSIONS

1. I am not prepared to accept either the theory or the practice of the present operation.

2 My exerience as well as the reports from other workers would seem to suggest that the operation should be discarded

3. A more careful study should be made of the sympathetic nervous system

4 An intensive study of the pathogenesis of various vascular disturbances should be made before operative procedures are resorted to.

5 The operation of periarterial sympathectomy carries with it some technical difficulties and is accompanied by not a few serious mishaps.

6. The substitution of ramisectomy and ganglionectomy for the present operation will greatly increase the operative risk.

7. The present operation has had a stimulating influence in broadening the general knowledge in this field of neurologic surgery, and has served to weld a closer bond between the neurologist and the surgeon.

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[36] Lewis, Dean; and Gatewood, Wesley: Treatment of Causalgia, J A M A **74:** 1 (Jan 3) 1920

[37] Taylor, K. P. A, and Rice, J B: Injections of Sciatic Nerve as Substitute for Sympathectomy, J A M A **86:** 191 (Jan 16) 1926

[38] Durante, L: Periarterial Sympathectomy, Policlinico **32:** 1345 (Sept 28) 1925

[39] Robineau, A: Varicose Ulcers and Sympathectomy, Paris med **4:** 390 (Feb) 1923 Jeanneney, G Sympathectomy in Leg Affections, Arch franco belges de chir **27:** 884, 1924 Kropveld, S. M · Present Status of Periarterial Sympathectomy, Nederl Tijdschr v Geneesk **1:** 2117 (May 10) 1924

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[46] Royle, N D A New Operative Procedure in Treatment of Spastic Paralysis and Its Experimental Basis, M J Australia **1:** 77 (Jan) 1924; The Treatment of Spastic Paralysis by Sympathetic Ramisection, Surg. Gynec Obst **39:** 701 (Dec) 1924

[47] Adson, A W, in Brown and Adson (footnote 45)

[48] Frederick, H Phenomena Following Sympathectomy, Klin. Wchnschr **3:** 2035 (Nov 4) 1924

[49] Milko, W Perforation of Femoral Artery Following Sympathectomy, Zentralbl f Chir **51:** 513 (March) 1924

[50] Zeno, A Perforation of Femoral Artery Seven Days After Sympathectomy, Semana med **32:** 1, 1925

[51] Brandenburg, K Collected Inquiry on Periarterial Sympathectomy, Med Klin Wchnschr **20:** 523 (April 20) 1924

[52] Rieder W Dangers from Periarterial Sympathectomy, Zentralbl. f Chir **51:** 1685 (Aug 2) 1924

[53] Kreuter, E Partial Periarterial Sympathectomy, Zentralbl. f Chir. **50,** Nov 17, 1923.

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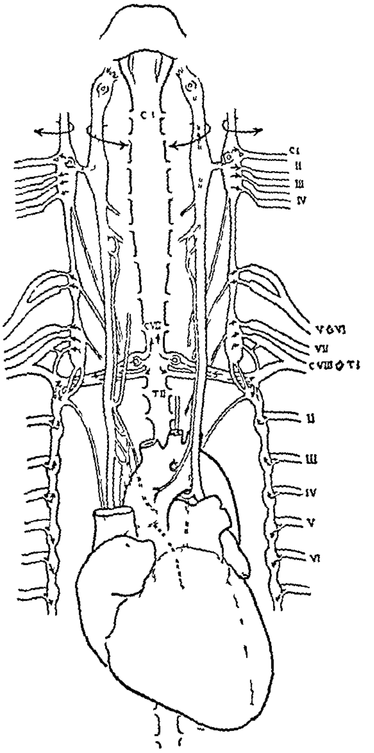
SYMPATHECTOMY IN ANGINA PECTORIS *

ELLIOTT C. CUTLER, M.D.
AND
JACOB FINE, M.D.
CLEVELAND

The pathologic process that gives rise to the clinical picture angina pectoris is of unknown etiology. Therefore, medical men have attempted symptomatic relief chiefly by rest and nitroglycerin, or by antispecific treatment when the disease has had a syphilitic origin. As these methods have been unavailing in many cases, it was natural to expect an attempt at symptomatic relief by surgical means, i. e., by interrupting nervous pathways carrying the painful stimuli. The belated efforts of surgeons in this field, in contrast to the early interference in comparable diseases, as tic douloureux, are due to our incomplete knowledge of the sensory pathways involved in cardiovascular symptomatology.



Connections of the heart with the central nervous system. The paired vagi are shown next to the cord with the ganglionated sympathetic chains external to the vagi. The connections of the sympathetic ganglions with the spinal nerves are drawn in. The origin of the depressor nerve in the superior sympathetic ganglion and in the upper ganglion of the vagus are represented with these fibers drawn in with dashed lines in the vagi and sympathetic ganglions. These fibers then branch away with the superior laryngeal nerve and finally travel free in the neck to end in the suprasigmoid portion of the aorta. The fibers running from the three cervical sympathetic ganglions medially and downward represent structures commonly called the upper, middle and lower cardiac nerves. These nerves are joined by many vagal fibers and fibers from the stellate and sometimes second dorsal ganglions to form a great network both in front and behind the aorta and base of the heart, in which in turn are embedded many sympathetic ganglion cells. Except for the connection of the vagi with the central nervous system in the brain stem, the connections between the stellate ganglion and the spinal cord at the level of the first dorsal nerve represents the only proved connection between the heart and the central nervous system.

The surgical treatment of angina pectoris was first proposed by Francois Franck[1] in 1899, but it was not until 1916 that Jonnesco,[2] a Bucharest surgeon, actually operated on a patient with syphilitic aortitis and angina, with complete relief from pain. C. H. Mayo,[3] however, observed a case of relief from angina in a man on whom he did a bilateral extirpation of the superior cervical ganglion in 1914, but he did not report it until 1925.

The theoretical considerations underlying the surgical procedure are briefly as follows: In order to abolish the pain of angina, we must interrupt the nervous arc involved, either on the efferent or on the afferent side. It is common knowledge that the vagi and sympathetic nerves comprise the entire innervation of the thoracic viscera, as shown in the accompanying illustration. As the pain of angina arises in the thoracic viscera and is referred to the corresponding somatic segments of the skin, it is obvious that the stimuli giving rise to the substernal pain must pass through the afferent sympathetics passing to that portion of the spinal cord which supplies somatic sensation to the sternum, upper chest and the upper extremities. The anatomic and physiologic investigations of Gaskell,[4] Langley[5] and others have demonstrated that the entire visceral, afferent as well as efferent, sympathetic fibers supplying the heart, superior mediastinum and the rest of the body cephalad to these are all concentrated in a great terminal—the great thoracic (stellate) ganglion. Hence, bilateral extirpation of this structure would completely denervate the heart and aorta of their sympathetic supply. The entire cervical sympathetic system has been shown by Langley[6] and Ranson[7] to be purely efferent and can be made completely functionless by a similar procedure. There is no need to consider the parasympathetic innervation, i. e., vagus, in this connection. It could not be effective in causing pain referred to the chest, for the somatic afferent fibers of this system have no distribution in this region. Wenkebach and Eppinger,[8] nevertheless attacked the depressor nerve in the hope of relieving the pain of angina pectoris. This nerve, as a result of the work of Koster and Tschermak[9] and more recently of Einthoven, is known to be a purely sensory nerve innervating the aorta. That it can in any way be associated with the anginal syndrome seems questionable, however, since the response to its stimulation consists in a fall of the blood pressure and a slowing of the heart. We know clinically that as a rule the blood pressure rises during an anginal seizure, so that one should assume, if the depressor nerve bears any relation to the disease, that it fails to respond to an

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[1] Franck, François: Signification physiologique de la resection du sympathique dans la maladie de Basedow, l'epilepsie, l'idiotie et le glaucome, Bull. de l'Acad. de med. **41**: 594, 1899.

[2] Jonnesco, Thomas: Traitement chirurgical de l'angine de poitrine par la resection du sympathique cervico thoracique, Bull. de l'Acad. de med. **84**: 93 (Oct. 5) 1920.

[3] Mayo, C. H.: Discussion on Lilienthal, Howard: Cervical Sympathectomy in Angina Pectoris: A Report of Three Cases, Arch. Surg., pt. 2, **10**: 541 (Jan.) 1925.

[4] Gaskell, W. H.: The Involuntary Nervous System, London, Longmans, Green & Co., 1916.

[5] Langley, J. N.: The Sympathetic and Other Related Systems of Nerves, Text Book of Physiology by E. A. Schafer, London, Macmillan Company, **2**: 616; The Autonomic Nervous System, Cambridge, W. Heffer & Sons, Ltd., 1921.

[6] Langley, J. N.: The Autonomic Nervous System, Brain **26**: 1, 26, 1903; The Sensory Nerve Fibers of the Heart and Aorta in Relation to Surgical Operations for the Relief of Angina Pectoris, Lancet **2**: 955 (Nov. 8) 1924.

[7] Ranson, S. W.: The Anatomy of the Nervous System, Philadelphia, W. B. Saunders Company, 1923. Ranson, S. W.; Billingsly, P. R., and Johnson, S. E.: Studies on the Sympathetic Nervous System, J. Comp. Neurol. **29**: 305 456, 1918.

[8] Eppinger and Hofer: Offizielles Protokoll der Gesellschaft der Aerzte in Wien, Wien. klin. Wchnschr. **36**: 334, 1923.

[9] Koster, G., and Tschermak, A.: Ueber Ursprung und Endigung des Nervus depressor und Nervus laryngeus superior beim Kaninchen, Arch. f. Entwcklngsgesch. Leipzig, Suppl., 1902, pp. 255 294; Ueber den Nervus depressor als Reflexnerv der Aorta, Arch. f. d. ges. Physiol. (Pfluger's) **93**: 24, 1902 1903.

overstretching of the aortic wall instead of responding excessively. Moreover, clinical pursuit of this procedure has not been very vigorous since it was proposed, because the nerve is difficult to find and when ablated is not productive of any significant improvement.[10]

On the other hand, the operation proposed by Jonnesco, which consists in removal of the stellate ganglions and all sympathetic ganglions cephalad to this, has in many cases given gratifying results. From what has already been said, however, his operation is unnecessarily extensive, since removal of anything in addition to the first thoracic ganglion is superfluous on theoretical grounds. But Coffey and Brown [11] discovered that removal of the superior cervical ganglion was often effective in removing the anginal pain. As this has been substantiated by the subsequent experience of others, it becomes necessary to explain such relief by supposing that this ganglion is involved in the nervous arc producing the anginal seizure and, since it contains only efferent neurons, that it is on the motor side of the cycle resulting in the production of the pain.

But no one has yet observed any noticeable physiologic effect on the heart or aorta as a result of stimulation or removal of this ganglion. The suggestion then presents itself that, since relief has in many cases been obtained by the most varied procedures, all of which have failed nearly as often as they have been successful, we are dealing with a symptom not directly referable to an organic lesion, and that, therefore, many cases of angina are neuroses which have been relieved by the suggestive power of surgery. However, few persons in contact with patients suffering from angina will be impressed by such a possibility; so that we are left with the unavoidable conclusion that there is something common to all the surgical procedures attempted that is responsible for the relief that unquestionably is being secured by surgical intervention in about 60 per cent of the cases. What that common factor is remains for the future to expose.

But, in spite of the gains being secured by surgery, there are certain objections offered to the procedure on the ground that we may be producing by nerve ablation irremediably disturbances of cardiac function or injury to the myocardium, etc.[12] These objections can be readily disposed of by the available experimental and clinical evidence that such surgical procedures in no way incapacitate the heart (clinical, Jonnesco [13] and others;[14] experimental, Cannon [15] and others [16]).

Before we can correctly evaluate the results of sympathectomy in angina pectoris, we must be sure that the cases in which operation has been done have been correctly diagnosed, and we must exclude extraneous but often necessarily concomitant factors that may have influenced the ultimate result. It is obvious from the literature that frequently cases are being chosen for operation concerning which the diagnosis of angina pectoris is at least doubtful, if not at times quite incorrect. In this connection we should bear in mind that angina pectoris clinically, if not pathologically, is a definite disease with its own characteristic group of symptoms that can be differentiated from other types of cardiac and chest pain. This frequently requires considerable experience and prolonged and mature study and deliberation. One of the most frequent syndromes with which it is confused is coronary thrombosis. Obviously, operation in such cases will only tend to discourage surgeons from a procedure that may in time come to have a very definite position in cardiac surgery. It must be borne in mind that angina pectoris is a disease that is not in any way necessarily associated with demonstrable cardiac dysfunction. It may sometimes prove necessary to give relief to a patient with angina who has at the same time some degree of cardiac embarrassment, but in the present experimental stage of the procedure it is hardly correct to allow such cases to enter into a consideration of the advisability of the procedure, since the dangerous condition of the heart itself and the extra load of surgical trauma are bound to warp the results and becloud the issue, which is: Can surgical intervention remove the symptom of pain without at the same time predisposing the circulation to any consequent disability? At the present time a sufficient number of cases have been reported in the literature to enable us, with the help of our own clinical experience on the subject, to draw a few conclusions as to the value of the operation. After we have deleted from the reported cases those which we believe have been advisedly selected for operation, there remain about eighty cases (up to six months ago) of true angina pectoris in which operation was done by six different procedures.[17] Certainly many more cases have been done (eighty-three by Leriche alone [18]), and many more are being done. From our own experience as well as from a careful survey of the literature it becomes increasingly evident that much indiscriminate surgery is being and will be done in this field unless the indications for surgery are duly considered and pointed out. It appears to us from a survey of the results achieved to the present that the most successful operation will probably prove to be the partial Jonnesco procedure; i. e., ablation of the stellage ganglion by the technic either of Jonnesco or of A. K. Henry.[19] There is no doubt that brilliant results will continue to be secured by the less formidable operation of superior cervical sympathectomy, but on theoretical and clinical grounds the more reliable one in the long run will prove to be the former.

Our own experience, though limited, may serve to illustrate certain points in the matter under discussion. It includes purposefully what may seem to be a variety of clinical conditions in that one of the patients is a youth of 19, suffering from marked aortic insufficiency of rheumatic origin. In our understanding of the disease angina pectoris, we are inclined to accept the view of Allbutt, and it seemed that cases of this type might be of the greatest assistance in appreciating the etiologic condition. This patient therefore, was submitted to operation with the hope that more light would be thrown on the focus of the disease in angina pectoris. In such a case, serious disease of the coronary arteries and myocardium seemed ruled out. And we knew that there was definite disease of the cusps of the aortic valve.

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[10] Odermatt, W: Die chirurgische Behandlung der Angina Pectoris, Deutsche Ztschr f. Chir **182**: 341 354, 1923

[11] Coffey, W B, and Brown, P. K The Surgical Treatment of Angina Pectoris, Arch Int Med **31**: 200 (Feb) 1923.

[12] MacKenzie, James: Diseases of the Heart, Edinburgh, Oxford University Press, 1925, p 346 Danielopolu, D: The Pathology and Surgical Treatment of Angina Pectoris, Brit M J **2**: 553 (Sept 27) 1924

[13] Jonnesco, Thomas: Le sympathique cervico thoracique, Paris, Masson et Cie, 1923.

[14] Levine, S A, and Newton, F C: The Selection of Patients with Angina Pectoris for Sympathectomy, with a Report of Additional Cases. Am Heart J **1**: 41, 1925 Lilienthal (footnote 3) Smith, F Janney, and McClure, R. D: Cervical Sympathectomy for the Relief of Pain; Report of Two Cases Treated Surgically for Angina Pectoris, Surg. Gynec. Obst. **39**: 210 215 (Aug) 1924

[15] Cannon, W. B: Personal communication to the authors. Also we ourselves have removed the stellate ganglions from both sides of dogs and have kept these animals over two years. Careful functional tests show no alteration of the cardiac ability.

[16] Schafer, E S: *Experiments on the Cervical Vagus and Sympathetic*, Quart. J Exper. Physiol **12**: 231 301, 1919 Montgomery, M. L.: The Effect of the Ablation of the Superior Cervical Sympathetic Ganglia on the Continuance of Life, Endocrinology **7**: 74 (Jan.) 1923.

[17] A review of the literature will be presented in a paper for future publication

[18] Leriche, Réné: Notes made by secretary of the Society of Clinical Surgery from talk by Leriche at his clinic, July 20, 1925. Report of the Fortieth Meeting of the Society of Clinical Surgery, Europe, June 20-July 27, 1925. Privately printed by J. J. Little and Ives Company, New York.

[19] Henry, A. K.: A New Method of Operation for Angina Pectoris, Lancet **2**: 1385, 1922; Cervical Sympathectomy for Angina Pectoris, Irish J. M. Sc. **5**: 147-194, 1924.

The following case reports include only the positive findings and serve merely to outline their course. All of these patients are controlled cases in the sense that they have had frequent, careful follow-up examinations, including vital capacity determinations, roentgen-ray studies and functional tests. They serve the purpose here merely of a skeleton on which one can hang the necessary facts for such an abbreviated discussion of this topic.

REPORT OF CASES

Case 1.—A man, aged 59, married, a printer, an inveterate pipe smoker, for ten months suffered substernal distress on effort. For four months he had an agonizing, gripping, viselike pain, increasing in severity and coming on with slight exertion and spreading to the neck and left arm, never to the right, relieved by nitroglycerin. There was no dyspnea, edema or other symptoms. For one month he had been confined to the house.

He was relatively normal for his age. His heart was of normal size: rhythm was regular, and there were no murmurs. The blood pressure was: systolic, 132; diastolic, 90. Electrocardiographic, roentgen-ray, blood and urinary studies were normal. There was no evidence of syphilis.

June 21, 1923, resection of the left superior cervical sympathetic ganglion was done. After three and one-half months he returned to work as a printer, walking more than a mile to his office. He continued to suffer from mild substernal distress, coming on with exertion. It was immediately relieved by nitroglycerin, which he took almost daily. There was no return of severe attacks. Symptomatically he was greatly relieved, and was very grateful. He died suddenly, Jan. 26, 1926, after an attack of severe pain lasting six hours. He was not personally observed, but death was apparently due to coronary thrombosis.

Case 2.—A youth, aged 19, single, had had rheumatic fever at 7 years of age, during which period he was confined to bed for several months. A year following this, the tonsils and adenoids were removed. There were repeated attacks of rheumatic fever up to the age of 16, at which time he was admitted to a hospital, complaining of heart trouble. Examination at that time showed marked enlargement of the heart, with a rough, blowing systolic murmur and a loud blowing diastolic murmur; the pulse was of the Corrigan type. The blood pressure was: systolic, 165; diastolic, 0. A diagnosis of aortic insufficiency and mitral insufficiency was made. Shortly before admission, the patient had begun to be troubled with attacks of substernal pain. This pain was consistently relieved by nitroglycerin. During the next three years there were frequent readmissions to the hospital, the complaint varying between weakness, loss of weight, shortness of breath and substernal pain. The patient was always improved symptomatically by rest in bed, but finally returned to the hospital complaining that the pain was becoming intolerable. It seemed to commence in the region underlying the midsternum. It progressed through to the back, sometimes to the right axilla, never down the left arm, and it was always relieved by nitroglycerin. At the time of last admission there were many attacks daily, and these were of great severity. The pain usually had its onset in some form of physical exercise. It was not relieved by digitalis therapy.

The youth appeared healthy, and the diagnosis of aortic insufficiency was apparent on the most superficial examination. There was a very wide area of cardiac impulse, and the pulsation in the neck was forceful and visible at a great distance. The heart was enormously enlarged, the major enlargement being in the region of the left ventricle. This was all confirmed by roentgen-ray and electrocardiographic studies. A vital capacity estimation showed a 25 per cent reduction from the expected normal.

In view of the central location of the pain, it was decided to perform sympathectomy on both sides. The operations were done at two sittings two weeks apart (Oct. 3 and Oct. 18, 1923). On the left side the superior cervical ganglion, after division of the ramus communicans inferiorly of its many lateral branches, was divulsed and removed. On the right side a portion of the communicating bundle between the upper and middle ganglions and of the superior candiac nerves was resected. The wounds healed without complication. There was the usual enophthalmos and myosis of the pupils.

Recent reports from the patient state that he is working, and that for at least six months he has taken no nitroglycerin. There are minor attacks of precordial pain, but none of great severity. The patient is up and around and at work daily, walking considerable distances. What pain he has is associated with some palpitation and dyspnea, but he states that it is a different kind of pain from what he suffered previously. He still complains of some distress in the left side of his face with chewing. It would appear as if the continued improvement over an interval of two and one-half years bore some relation to the operative procedure.

Case 3.—A man, aged 72, married, had for three or four years suffered with substernal oppression on exertion, increasing in severity, and lately accompanied with a dull, crushing pain in the left shoulder and arm. In recent attacks he felt that he was dying.

There was slight cyanosis. The heart was of normal size; there was a faint systolic murmur, and an accentuated aortic second sound. The blood pressure was: systolic, 170; diastolic, 70. Vital capacity was decreased. Blood, urine and electrocardiographic studies were normal.

Jan. 7, 1924, the upper, middle and lower left cervical sympathetic ganglions were removed. He is now active and states that he is much improved. The blood pressure is: systolic, 160; diastolic, 80. The heart sounds are unchanged. On rare occasions with exertion, as when working in the garden, there is a vague sense of constriction in the chest. He is satisfied. He rarely takes nitroglycerin for the pain. Though never a very severe case, it seems as if his condition has been improved since the operation two years ago.

Case 4.—A man, aged 60, married, a merchant, twenty months previously, without similar attacks, after an unusually long walk in deep snow had a very severe and alarming pain, substernal, vicelike, into the root of the neck and down the left arm. Subsequent attacks became increasingly frequent and on slight exertion. There was no dyspnea.

The patient appeared vigorous. The blood pressure was: systolic, 125; diastolic, 80. The heart was of normal size, rate and action. Roentgen-ray, exercise, electrocardiographic, blood and urine studies were normal.

Nov. 22, 1924, division of the left superior cardiac nerves and of the trunk between the upper and middle ganglion was done. After six months the patient was readmitted to the hospital, since we became convinced that the return of distress was equal to the previous complaints. June 6, 1925, resection of the left middle, inferior and stellate ganglions was done. When seen in consultation with his family physician, October 26, his general condition was excellent. He was cheerful, had suffered from no severe attacks, and was not taking nitroglycerin, but objected because he could not walk as far as he used to. Without any warning, but preceded by mental worry, he was suddenly seized at 2:30 a. m., Jan. 7, 1926, with severe, agonizing, substernal pain, which radiated into his arms (unfortunately no close observation was made as to whether the pain was greater in the right or left side). He died within a few hours, and his physician described the pain and attack as "truly anginal." Although there were no records of the behavior of his pulse and pressures, it seems reasonable to conclude that death was due to coronary thrombosis.

Case 5.—A man, aged 65, married, a merchant, for one year had a crushing, viselike pain beneath the sternum and to the left part of the chest, left shoulder and the root of the neck. There was an aura of great distress and threatened disaster. He had lost 40 pounds (18 Kg.). Nitrites gave relief temporarily.

The patient was emaciated, desiccated, and extremely apprehensive. The left ventricle was enlarged; there was no evidence of widening of the aortic arch. There were no cardiac murmurs. The pulse was regular. The blood pressure was: systolic, 140, diastolic, 80, rising to 180 with attacks. Electrocardiographic studies were normal. A functional test showed good response to effort.

May 23, 1925, a left cervicothoracic sympathectomy[20] was done. The patient died, May 31, eight days later. Immediately after operation there occurred curious and inexplicable periods of apnea, with rapid pulse and normal pressures. Gradually the patient became totally disorientated and mentally exhausted, the pulse gradually deteriorated, and death supervened with respiratory failure. No necropsy was permitted. Explanation periods of apnea were wanting. The marked mental symptoms seemed to indicate sclerosis of the cranial vessels, with softening of the brain.

CASE 6.—A man, aged 54, married, a steward, for one and one-half years had been incapacitated by attacks of substernal pain. It often extended into the root of the neck, the back and down the left arm. With the pain was a sense of impending disaster. He was unable to work, since effort brought on pain. Relief was obtained from nitroglycerin.

He was a rugged, vigorous man. The heart was normal in size and action. The blood pressure was: systolic, 128; diastolic, 75. There were no murmurs. The Wassermann reaction was negative. Blood, urine and electrocardiographic studies were normal.

April 27, 1925, a left cervicothoracic sympathectomy was done. After two weeks of freedom and with the recommencement of exercise, pain began to return, but this time it was situated just to the right of the sternum in the second and third interspaces, with radiation into the root of the neck. The pain was very severe and alarming, and was accompanied by peculiar attacks of apnea. May 29, a partial right cervicothoracic sympathectomy was done, with removal of the middle and inferior cervical ganglions and stellate ganglion.[21] Following the last operation, the patient at first was much more comfortable. He suffered from vague burnings around the left ear and right shoulder. Breathing was unaffected by pain as formerly. It was unnecessary to take nitroglycerin. He took up smoking again. With increasing effort as he began to walk about and eat more, he had a return of distress beneath the right border of the sternum, but never so severe as previously. Nitroglycerin was given, with relief. Jan. 8, 1926, he walked to the office to discuss his case, had regained 30 pounds (13.6 Kg.), was cheerful, and was greatly relieved. January 24, he was seized with severe agonizing pain just to the right of the sternum. Nitroglycerin alone gave relief. He has lost appetite and does not sleep well. The pulse remains regular. He is considerably depressed. The continuance of rightsided pain may be evidence that the stellate ganglion on this side was not completely extirpated. The downward tendency in the last two months offers a bad prognosis and may bespeak advanced coronary sclerosis.

CASE 7.—A man, aged 64, married, a clerk, up to eight months ago had been unusually active. The original symptoms were indigestion and substernal distress; later, difficulty in getting the breath, and a sense of constriction of the chest. Still later, there were attacks of pain originating beneath the sternum and radiating to the root of the neck and down both arms. The pain was always greater on the right side. The patient reacted to the pain by getting up and moving the arms about. Recently the pain had been crushing, very severe, not relieved by morphine, and there was constant substernal distress.

The patient was spare but well developed. The heart was slightly enlarged, the aortic arch a little widened. The pulse ranged from 80 to 90. The blood pressure was: systolic, 154; diastolic, 78. No cardiac murmurs were heard. Vital capacity and electrocardiographic, blood and urine studies were normal. Response to the exercise test was good.

Nov. 18, 1925, right cervicothoracic sympathectomy was done (the right side was operated on first, since the history of painful attacks emphasized the greater intensity of the pain on this side). The immediate postoperative course was satisfactory. The patient was sent home for Thanksgiving. December 4, left cervicothoracic sympathectomy was done. Except for slight twinges of pain in the jaws, shoulders, etc., as by-effects of the operation, the condition has been satisfactory. There has been no substernal pain. The patient is beginning to walk about, satisfied, and apparently considerably improved. He was last seen, March 18, 1926. After a mile walk and climbing up a long and very steep flight of stairs, the pulse was 88; systolic blood pressure, 165; diastolic, 90; vital capacity, 25 per cent decrease; no dyspnea, and no other symptomatic complaint.

COMMENT

From a consideration of these cases it becomes evident that a single or bilateral extirpation of the superior cervical ganglion or of the entire cervical chain and first dorsal ganglion will frequently give temporary complete or partial relief and often will fail. The complete operation is less likely to fail entirely, however, than simple superior ganglionectomy. (Case 4 showed return of pain after the simple operation, but was apparently improved following the secondary removal of the stellate ganglion on the same side.) In certain cases it appears that what was considered a leftsided angina before operation has been converted into a rightsided angina by a left Jonnesco procedure (case 6). This, however, means that the leftsided angina was relieved and the residual rightsided angina, not noticed by the patient preoperatively because of its comparative insignificance, now remains. Contrary to our conception of the anatomic factors involved, from which it would seem that proper sensory nerve ablations ought to stop the pain immediately afterward, certain patients eventually totally relieved, even after complete bilateral Jonnesco procedure, will still have pain, as a rule reduced in severity, postoperatively for a few weeks or months. This is ample evidence to indicate the insufficiency of our knowledge concerning the sensory innervation of the heart.

We have in no case observed any deleterious effects on the cardiac capactiy of the patient as a result of operation. A few have expressed the opinion that cases of syphilitic angina are particularly dangerous cases for operation.[22] It is difficult to understand why sympathectomy should be dangerous in these cases. A general anesthetic and prolonged surgical trauma may well be deleterious, but these are matters that enter into consideration as a routine in any case of syphilitic cardiac disease in which an operation is contemplated. When these dangers are duly cared for, a case of syphilitic angina should benefit from the operation as certainly as any other type of case.

The cases that are particularly dangerous in our experience are those which present advanced cerebral arteriosclerosis combined with severe coronary disease. They will not tolerate any surgical procedure well, and it seems as if sympathectomy makes them definitely worse, although it may relieve the pain (case 5).

Among the most distressing postoperative complications of the procedure are the by-effects of sympathectomy, which seem to be directly proportional to the degree of nerve resection. The Horner syndrome is a minor defect that compensates itself in time. But particularly annoying are the pains that are felt in the shoulder, neck, face, jaw and arm on the side on which operation is performed. In the jaw, especially along the ramus, and in the temporomandibular joint, the patient experiences a severe pain especially at the onset of a meal, and it may persist throughout the period of food ingestion in severe cases. There is a constant ache in the shoulder or scapula and down the arm, particularly at night, which is difficult to relieve except by narcotics or local counterirritants. Areas of hyperesthesia on the face, ear or neck will vary, as do those of anesthesia, with the amount of injury done to the cervical plexus during the operation. These symptoms vary in severity and extent of distribution in different cases, and may be so distressing as to make the cure seem worse than the disease. One patient of ours compared the terrible feeling in his entire left arm to a sensation of an infinite number of "slivers" sticking into it. Because of the transitory nature of these symptoms, it seems that they may be due to one of several possibilities—the altered vasomotor control of the organs and tissues deprived of their involuntary nerve supply, or irritation of the somatic sensory neurons of the spinal and cerebral ganglions as a result of neuronic degeneration of the severed sympathetic nerves.

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[20] The term cervicothoracic sympathectomy we use to describe the complete Jonnesco operation, with removal of all the cervical and the first thoracic or stellate ganglions.

[21] There was some doubt at the operation in this case whether all of the stellate ganglion was removed. Subsequent developments add evidence to make us feel that not all the afferent fibers were interrupted.

[22] Levine and Newton (footnote 14).

That surgery will come to have a definite place in angina pectoris seems promising, but it is impossible as yet to say definitely which is the most desirable procedure of those proposed. We lean in favor of the partial Jonnesco procedure, unilateral or bilateral, depending on the individual case.

Unfortunately, this is not a subject susceptible of laboratory investigation beyond the point of establishing the possible location of the extrinsic nervous connections of the heart. It should be remembered by all who would shoulder the responsibility of operating on such patients that this study is still in its experimental stage and that only those who are carefully studied and carefully selected before operation and are followed until the end result is known can be justifiably submitted to operation.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. FORBES AND COBB; RANSON; DAVIS AND KANAVEL; MC NEALY, AND CUTLER AND FINE

Dr. Herbert E. Coe, Seattle: Royle and Hunter opened up a new phase in the surgical treatment of the spastic paralyses, and this was followed by the usual wave of hyperenthusiasm. Dr. Davis has sent the pendulum to the other extreme of its swing when he says that they have failed completely to confirm the work of Royle and Hunter. This should put an effective check on ill advised surgery. Does not the paper as a whole, however, leave too pessimistic an impression? The ability of Hunter and Royle is widely recognized throughout the scientific world. It does not seem reasonable that whatever improvement they have reported in these spastic cases has been due solely to enthusiasm, suggestion or autosuggestion. The comment of the authors as to the possible causes of this improvement deserves careful study. Whatever the cause of the improvement, whether it is temporary or permanent, psychologic or physiologic, it may be stated definitely that some degree of improvement has occurred in some cases in which surgery has been done on the sympathetic nervous system. Why do we hear such conflicting reports? Dr. Davis has placed his finger squarely on the essential point when he reminds us that we do not know the nature of muscle tone and that we have no method of measuring it. This refers the question directly back to the physiologist, where it must remain until muscle tone is better understood and a method of measurement is devised which eliminates as completely as possible the personal equation. Those of us who have the opportunity of studying these cases must bear constantly in mind the four cardinal indications, all of which must be present before surgery of the sympathetic system may be even considered—adequate mentality, a clear nerve pathway from cortex to end-organ, no physical obstruction to motion, and the inability to relax quickly. When these four indications are present, and when the case admits of reasonable control and accurate record, it would seem advisable to continue the observation of surgical results. Finally, from the point of view of the spastic patient in general, the most valuable result of this work is not the variable amount of improvement in the 5 or 10 per cent that may come to operation, but rather what we may term a by-product. It is heartless to drive these patients into the hands of charlatans with the curt prognosis "hopeless," for we have had recalled to us, and emphasized, the distinct improvement that may be obtained in the large proportion of cases by tried and proved orthopedic measures and by muscle training and reeducation.

Dr. Charles S. Venable, San Antonio, Texas: Most certainly all of the weight of evidence from the anatomic, physiologic and histologic standpoint is against sympathectomies. On the other hand, there must have been some clinical improvements or possibly some cures to have incited so much interest and so much research. I have lost some of my enthusiasm and possibly a little of my optimism in the ultimate curative end-results to be obtained by what one may speak of as broadcasting sympathectomies. But, on the other hand, when one has seen the entire relief from the severe pain in the painful stump which had previously been subjected to alcoholic injections or further resection, or when one has seen an atrophic ulcer which had been treated over a great number of years and in a great many ways heal and remain healed, one is encouraged, for lack of possibly something else to do, to repeat this procedure because nothing else is offered. In cases of Raynaud's disease, of which I have had five, the primary result is the prompt relief from pain and apparently a very prompt tendency, due to vasodilatation, of the ulcer to heal. In two of these cases the ulcers have healed and remained healed for varying lengths of time. One great advantage seems to be the possibility of amputation at a site of election rather than the necessarily high amputation we have had to practice heretofore. In cases of diabetic gangrene I have been able to do amputations below the knee with prompt stump healing, which I have done at a period of election, from ten to fifteen days after the sympathectomy. In one instance it was four days after the sympathectomy. I think that we should at least feel sufficient encouragement to go on with the investigation, and clinically I am afraid that I am going to be the culprit until our friends investigate us and either prove us so entirely wrong that all clinical evidence seems to go the other way, or agree and come along with us.

Dr. Samuel Clark Harvey, New Haven, Conn.: It is very apparent that there is no definite correlation between the anatomic and the physiologic findings that Dr. Ranson has presented, and the clinical results that have been obtained by the operative procedures so far employed, and particularly the operative procedure of Coffey and Brown. I should like to know more about the position of the sensory fibers in the sympathetic tract. Dr. Ranson has spoken of the physiologic and clinical evidence, which seems not at all complete. The clinical evidence consists of a few isolated observations which have been thought of as analogous to the somatic sensory system. I do not know that necessarily the lack of pain and response to the ordinary forms of stimulation employed at operation in the sympathetic system rule out the afferent impulses. The histologic evidence should be given more definitely, and I should like Dr. Ranson to tell us the evidence that he has from the histologic standpoint as regards the sympathetic sensory tracts. It is very apparent that the procedure employed clinically, and undoubtedly with palliative success, is of considerable importance. As to the selection of cases, we should be conservative. I do not feel that those cases that are diagnosed as coronary thrombosis should be ruled out. There are instances in which the outcome is very problematic, and certainly these should not be subjected to a prolonged and severe operative procedure under general anesthesia. As to the choice of operation, the less severe procedure should be employed first. The operation of Coffey and Brown, avulsion of the superior sympathetic ganglion or the division of the superior cardiac nerve and of the sympathetic trunk, is a relatively easy procedure which can be carried out perfectly well under local anesthesia, and as a tentative attack should be employed in each instance. Dr. Cutler did not lay sufficiently great emphasis on the fact that certain embarrassing sequelae may occur in any type of sympathectomy, the most embarrassing being the curious form of paresthesia analogous to or resembling Sluder's neuralgia. This may be very bothersome. Without doubt this operation has produced some results, perhaps not curative but certainly palliative. It is a purely empiric procedure, for the moment, not based on sound anatomic or physiologic reasoning. It is an experimental procedure on man, and such procedures on man should be carried out by those who are so situated as to make them scientific experiments. I do not think that the procedure is yet so sufficiently standardized as to justify employing it as a common therapeutic procedure. Dr. Cutler's paper exemplifies the study and care in the follow-up of the cases that is necessary, and these should be employed by any one who carries out this operative technic.

Dr. Walter B. Coffey, San Francisco: Five years ago I severed the superior cardiac nerve and the main branch of the sympathetic in a patient suffering from frequent attacks of angina. Physiologists claimed that there were no fibers of sensation as high as the superior ganglion. The fact remains, however, that the eight or ten attacks a day in my case ceased. *This operation has accomplished all that* any of the numerous procedures more complicated and dangerous have done with equally less disturbance and less mortality, for attacks have recurred after unilateral and bilateral resection of the stellate ganglion. I have now operated in about thirty-five cases with encouraging results. Four times I had to resect on both sides. I cannot emphasize too strongly that surgeons should not attempt the procedure without the advice of good clinicians. No patient on whom I have operated has died of an attack of angina. The few deaths were from an underlying organic lesion. I have experimented on animals and done many dissections. My assistant at that time, Dr. John Humber, now assistant professor of anatomy at Tulane, has continued the dissections, using a technic, tried at operation by me, of inflating the ganglion. Such inflation spreads out through the various branches and fibers connected with the ganglion. The dissections show connections and collaterals not previously demonstrated. In some cases, we found the superior ganglion high up in the angle close to the jugular foramen, and in many instances I severed the upper pole of the ganglion. *This would leave the carotid and* jugular branches with its collaterals to the carotid plexus and tympanic plexus. It may be the explanation why we get pain in some of these cases due to impulses through collaterals. The tympanic plexus is the most important relay station in the sympathetic system. I am quite certain that where these two branches from the upper pole, that is, the internal carotid and jugular, were severed favorable results were obtained. In a severe case of angina, the upper sympathetic system was thoroughly inflated with triple distilled water. The angina attacks disappeared, but a remarkable incident occurred on the night of the operation. The patient developed Cheyne-Stokes respiration. I could account for this only through the spreading of the fluid through a branch (which I frequently find) from the superior ganglion to the phrenic to the vagus through the connecting branches.

Dr. Alexander Lambert, New York: Sympathectomy by several different operations has been successful for the relief of anginal pain, but the same surgical procedure in one man has not relieved the pain in another. The variation in man of the pathways of the sensory nerve fibers is as varied as are the opinions as to what is best to do. It is not known which are the usual sensory pathways in man. The opinions of Danielopolu and the French observers differ from those expressed by Dr. Ranson and Dr. Cutler. The operation of sympathectomy has a low death rate, but when the stellate ganglion is removed, there is a distinctly greater death rate from the immediate effects on the patient than in any of the other operations. If this stellate ganglion is removed, about one fifth of the patients die of acute edema of the lungs soon afterward. The success of the various operations may be due, not to cutting of the sensory fibers, but to breaking up of the reflex arc, and a prevention of excessive stimulation of the vasoconstrictor reflexes. All this doubt as to what may be the result of any given operation of sympathectomy emphasizes the wisdom of trying a procedure, previous to operation, which stops the pain where it expresses itself on the body. All sensory nerves coming from the viscera go through some spinal nerve to the spinal cord by way of the white rami; these white rami occur only from the first dorsal to the fourth lumbar; therefore, when pain comes from the heart, it goes into the spinal cord through one of these nerves. All sensory nerves go through the posterior root ganglion of these spinal nerves, and this posterior root ganglion can be reached and the sensation of pain can be blocked off in that root ganglion. This has been done in New York by Dr. George Swetlow with marked success. It is not a difficult operation, it does block off the pain where it shows itself in the body segment, and it is the relief of pain *that the patient seeks. It is asserted that the pain of angina* is a warning, and a protective sensation: It is well to remember that the pain is the other man's pain, not yours, and he should be the one to decide whether or not it should be removed, especially since Bayliss has shown that through the sensory nerves the vasoconstrictor reflexes cause the danger in the angina. If these vasomotor reflexes can be cut off with the cessation of pain, the advantage is vastly greater than the mere relief of the pain. Most patients in whom the pain has been relieved by sympathectomy have shown distinctly an increased ability for exertion without excessive cardiac disturbance, which they did not possess previous to operation. Thrombosis of the coronaries, or coronary disease, does produce pain, and not all anginal pain comes from the aorta alone. It is also a curious fact that 25 per cent of those suffering from coronary disease have their expression of it in the epigastrium in the nerves that come out from the second to the ninth dorsal vertebrae running into the plexuses on the esophagus, lungs and heart. One cannot by any sympathectomy stop this expression of pain. In the epigastric pain, therefore, one is reduced to the necessity of blocking it, if one desires to help it. In only 10 per cent of patients suffering from coronary disease does the pain go down the arm and sympathectomy have a chance to help.

Dr. Arthur Steindler, Iowa City: This symposium is a general attempt to break down some of the claims that have been made by Royle and Hunter, and if it is, a thorough job has been done. I have been very much impressed with what I have heard today, but when we heard Royle and Hunter, we were likewise deeply moved by the thoroughness and earnestness of their work. I feel that while this investigation into their work is going on, it is proper to investigate the investigation. From the physiologic point of view, the matter stands as it did some time ago, namely, that it is acknowledged that the sympathetic nervous system has a direct influence on the innervation of the peripheral or skeletal muscles; but the question of how this innervation is arranged is still unanswered. I regret that the experiments have not been extended to the fowl and to the seagull, in which spastic tone is especially noticeable and spastic tone is a definite function and not an obstacle, as it is in man. I believe it the strongest point in the physiologic investigations of Hunter that special sympathetic control was to be found in these birds that soar and that have to keep their wings in a special state of contracture for an unbelievably long time. When it comes to the clinical evidence, it seems to me that the cases in which we have succeeded must be explained first before we can dispose of sympathetic innervation as a physiologic factor. I am greatly impressed with what I have heard today, but it seems to me that there particularly annoying are the pains that are felt in the shoulder, neck, face, jaw and arm on the side on which operation is performed. In the jaw, especially along the ramus, and in the temporomandibular joint, the patient experiences a severe pain especially at the onset of a meal, and it may persist throughout the period of food ingestion in severe cases. There is a constant ache in the shoulder or scapula and down the arm, particularly at night, which is difficult to relieve except by narcotics or local counterirritants. Areas of hyperesthesia on the face, ear or neck will vary, as do those of anesthesia, with the amount of injury done to the cervical plexus during the operation. These symptoms vary in severity and extent of distribution in different cases, and may be so distressing as to make the cure seem worse than the disease. One patient of ours compared the terrible feeling in his entire left arm to a sensation of an infinite number of "slivers" sticking into it. Because of the transitory nature of these symptoms, it seems that they may be due to one of several possibilities—the altered vasomotor control of the organs and tissues deprived of their involuntary nerve supply, or irritation of the somatic sensory neurons of the spinal and cerebral ganglions as a result of neuronic degeneration of the severed sympathetic nerves.

That surgery will come to have a definite place in angina pectoris seems promising, but it is impossible as yet to say definitely which is the most desirable procedure of those proposed. We lean in favor of the partial Jonnesco procedure, unilateral or bilateral, depending on the individual case.

Unfortunately, this is not a subject susceptible of laboratory investigation beyond the point of establishing the possible location of the extrinsic nervous connections of the heart. It should be remembered by all who would shoulder the responsibility of operating on such patients that this study is still in its experimental stage and that only those who are carefully studied and carefully selected before operation and are followed until the end result is known can be justifiably submitted to operation.

ABSTRACT OF DISCUSSION

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DR. WALTER B. COFFEY, San Francisco: Five years ago I severed the superior cardiac nerve and the main branch of the sympathetic in a patient suffering from frequent attacks of angina. Physiologists claimed that there were no fibers of sensation as high as the superior ganglion. The fact remains, however, that the eight or ten attacks a day in my case ceased. This operation has accomplished all that any of the numerous procedures more complicated and dangerous have done with equally less disturbance and less mortality, for attacks have recurred after unilateral and bilateral resection of the stellate ganglion. I have now operated in about thirty-five cases with encouraging results. Four times I had to resect on both sides. I cannot emphasize too strongly that surgeons should not attempt the procedure without the advice of good clinicians. No patient on whom I have operated has died of an attack of angina. The few deaths were from an underlying organic lesion. I have experimented on animals and done many dissections. My assistant at that time, Dr. John Humber, now assistant professor of anatomy at Tulane, has continued the dissections, using a technic, tried at operation by me, of inflating the ganglion. Such inflation spreads out through the various branches and fibers connected with the ganglion. The dissections show connections and collaterals not previously demonstrated. In some cases, we found the superior ganglion high up in the angle close to the jugular foramen, and in many instances I severed the upper pole of the ganglion. This would leave the carotid and jugular branches with its collaterals to the carotid plexus and tympanic plexus. It may be the explanation why we get pain in some of these cases due to impulses through collaterals. The tympanic plexus is the most important relay station in the sympathetic system. I am quite certain that where these two branches from the upper pole, that is, the internal carotid and jugular, were severed favorable results were obtained. In a severe case of angina, the upper sympathetic system was thoroughly inflated with triple distilled water. The angina attacks disappeared, but a remarkable incident occurred on the night of the operation. The patient developed Cheyne-Stokes respiration. I could account for this only through the spreading of the fluid through a branch (which I frequently find) from the superior ganglion to the phrenic to the vagus through the connecting branches.

DR. ALEXANDER LAMBERT, New York: Sympathectomy by several different operations has been successful for the relief of anginal pain, but the same surgical procedure in one man has not relieved the pain in another. The variation in man of the pathways of the sensory nerve fibers is as varied as are the opinions as to what is best to do. It is not known which are the usual sensory pathways in man. The opinions of Danielopolu and the French observers differ from those expressed by Dr. Ranson and Dr. Cutler. The operation of sympathectomy has a low death rate, but when the stellate ganglion is removed, there is a distinctly greater death rate from the immediate effects on the patient than in any of the other operations. If this stellate ganglion is removed, about one fifth of the patients die of acute edema of the lungs soon afterward. The success of the various operations may be due, *not to cutting of the sensory fibers, but to breaking* up of the reflex arc, and a prevention of excessive stimulation of the vasoconstrictor reflexes. All this doubt as to what may be the result of any given operation of sympathectomy emphasizes the wisdom of trying a procedure, previous to operation, which stops the pain where it expresses itself on the body. All sensory nerves coming from the viscera go through some spinal nerve to the spinal cord by way of the white rami; these white rami occur only from the first dorsal to the fourth lumbar; therefore, when pain comes from the heart, it goes into the spinal cord through one of these nerves. All sensory nerves go through the posterior root ganglion of these spinal nerves, and this posterior root ganglion can be reached and the sensation of pain can be blocked off in that root ganglion. This has been done in New York by Dr. George Swetlow with marked success. It is not a difficult operation, it does block off the pain where it shows itself in the body segment, and it is the relief of pain that the patient seeks. It is asserted that the pain of angina is a warning, and a protective sensation: It is well to remember that the pain is the other man's pain, not yours, and he should be the one to decide whether or not it should be removed, especially since Bayliss has shown that through the sensory nerves the vasoconstrictor reflexes cause the danger in the angina. If these vasomotor reflexes can be cut off with the cessation of pain, the advantage is vastly greater than the mere relief of the pain. Most patients in whom the pain has been relieved by sympathectomy have shown distinctly an increased ability for exertion without excessive cardiac disturbance, which they did not possess previous to operation. Thrombosis of the coronaries, or coronary disease, *does produce pain, and not all anginal pain comes from the* aorta alone. It is also a curious fact that 25 per cent of those suffering from coronary disease have their expression of it in the epigastrium in the nerves that come out from the second to the ninth dorsal vertebrae running into the plexuses on the esophagus, lungs and heart. One cannot by any sympathectomy stop this expression of pain. In the epigastric pain, therefore, one is reduced to the necessity of blocking it, if one desires to help it. In only 10 per cent of patients suffering from coronary disease does the pain go down the arm and sympathectomy have a chance to help.

DR. ARTHUR STEINDLER, Iowa City: This symposium is a general attempt to break down some of the claims that have been made by Royle and Hunter, and if it is, a thorough job has been done. I have been very much impressed with what I have heard today, but when we heard Royle and Hunter, we were likewise deeply moved by the thoroughness and earnestness of their work. I feel that while this investigation into their work is going on, it is proper to investigate the investigation. From the physiologic point of view, the matter stands as it did some time ago, namely, that it is acknowledged that the sympathetic nervous system has a direct influence on the innervation of the peripheral or *skeletal muscles*; but the question of how this innervation is arranged is still unanswered. I regret that the experiments have not been extended to the fowl and to the seagull, in which spastic tone is especially noticeable and spastic tone is a definite function and not an obstacle, as it is in man. I believe it the strongest point in the physiologic investigations of Hunter that special sympathetic control was to be found in these birds that soar and that have to keep their wings in a special state of contracture for an unbelievably long time. When it comes to the clinical evidence, it seems to me that the cases in which we have succeeded must be explained first before we can dispose of sympathetic innervation as a physiologic factor. I am greatly impressed with what I have heard today, but it seems to me that there are still holes in both presentations of the case, negative and positive. Royle and Hunter are still insisting on the efficacy of the method on the physiologic grounds for which they have accepted the findings of Langelaan and the histologic findings of Boeke.

Dr. W. B. Carrell, Dallas, Texas: Stimulated by the work of Hunter and Royle, we were encouraged to do a series of ramisections in Little's disease during 1925. Twenty-five of these were lumbar and ten cervical. In all lumbar cases definite hyperemia followed within a few hours, with from 1 to 2 degrees elevation of surface temperature and the sensation of warmth persisted in all cases. This was very noticeable in children reexamined months later, during cold weather, when the foot and leg on the operated side was distinctly warmer than on the other, but without any elevation of temperature. The improvement in the function has not been marked, but in fifteen cases the gait was improved to the extent of more ease in flexing and bending the knee and walking with less rigidity. The parents and patients themselves were pleased with the improvement and motion pictures show increased motion at the knee after the operation. We did not have any appreciable change in the reflexes, the amplitude of the knee jerk was the same and the *sustained action was as great as before operation.* The cervical cases have not shown any appreciable improvement. We did not get the early hyperemia as pronounced, which has perhaps resulted from less thorough operative technic.

Dr. S. W. Ranson, St. Louis: Some one raised the question as to the proof that large fibers in the sympathetic system are sensory. That proof was offered more than twenty years ago by Edgeworth, and his findings have been confirmed by me. If the roots of spinal nerves are cut proximal to the spinal ganglions, all the motor fibers degenerate; the sensory fibers remain. If, after section of the roots of the thoracic nerves, one studies the corresponding white rami, one finds that these large fibers remain because their cells of origin are in the sensory ganglion. One clear evidence that the pain fibers from the heart do not pass upward through the cervical sympathetic trunk to the superior cervical sympathetic ganglion is the fact that in a considerable number of cases characteristic anginal pain has recurred after removal of the superior cervical sympathetic ganglion. In one such case, after removal of the left superior cervical sympathetic ganglion, pain of typical anginal character recurred, and in the course of months it became even worse than before, as a result of the progress of syphilitic aortitis. It seemed that it would be difficult to remove the lower part of the cervical sympathetic trunk and the first thoracic ganglion. So Dr. Sachs cut the sensory roots of the first four thoracic nerves of the left side approximately three weeks ago, and since that time the patient has been absolutely free from pain. That, I think, answers the question that was raised by Dr. Lambert in regard to the variations in sensory paths, showing that after all if the dorsal roots of the first three or four thoracic nerves are cut on the left side, the pain disappears. Dr. Cutler mentioned a case in which, after bilateral removal of the stellate ganglions, pain persisted. I should like to know whether, perchance, that pain is not the collar pain round the upper part of the neck over the jaw and shooting up on the side of the head which many years ago was attributed by Head to a reference from the vagus into the distribution of the upper cervical and trigeminal nerves.

Dr. Alexander Forbes, Boston: It has been said that it was "up to" physiology to solve the problem of tonus. I have found no convincing evidence that tonus is anything more than a name, by which I mean that tonus is not in any fundamental respect different from any other contraction. If one stimulates a frog's muscle with a single, instantaneous stimulus, one gets a brief contractile twitch lasting about a tenth of a second. If one stimulates the muscle repeatedly with stimuli at a rate of more than twenty a second, one gets sustained contraction, but there is no fundamental difference between those contractions; in the latter case the disturbances follow one another so rapidly that contraction is mechanically sustained. I very much doubt if skeletal muscle, except under peculiar conditions, such as fatigue, producing increase in acidity, has two kinds of contraction; that is, whether the sustained contraction we call tonus is fundamentally different from the briefer contractions, any more than the tetanized muscle differs fundamentally in its behavior from the muscle subjected to a single stimulus. As to the work of Langelaan, in which he attempted to show a fundamental distinction between plasticity and contractility in muscle, I have examined his work carefully and can find no logic in it whatever. He definitely misquotes the work of Lucas and misinterprets some of his observations. He bases his distinction apparently on the difference between a twitch produced by a single brief stimulus and a reflex contraction of gradual onset; but the reflex contraction, as far as the evidence was concerned, was presumably built up of individual responses of the same fundamental character as that appearing in the twitch. Sherrington, Liddell and Fulton recently reported a large volume of very important work showing how the impulses of muscle sense serve to produce reflexly sustained muscular contraction. They are of the most profound importance. I should have mentioned, perhaps, a possible explanation for the effects of sympathectomy. If the disturbance of circulation affects the intramuscular receptors, there may be some modification of their function, and an alteration of the afferent impulses arising therefrom with a consequent change in reflex effect. I do not think we are justified in assuming, yet, that there is a plastic tonus or that tonus is fundamentally different in any way from other sustained contraction of voluntary or reflex origin.

Dr. Loyal Davis, Chicago: Many new methods of treatment for spasticities of the extremities have been advocated. With reference to the experimental work of Hunter done on fowls, it must be borne in mind that it is very difficult to perform a ramisectomy on birds without seriously injuring the anterior motor roots of the animal's plexus. Of course, by such trauma one produces an immediate flaccidity in the wing of the same side. This has been the almost universal objection to this particular experimental work, and one can easily understand such difficulties if one attempts to perform this operation. The extensive posterior root sections practiced by Trendelenburg and his careful controls and subsequent records would tend to support the view that some other factor than posterior root section is operative in producing the drooping of the wing shown in Hunter's animals. Trendelenburg concluded that somatic afferent and sympathetic denervation of a single wing did not produce drooping or a defect in voluntary and reflex movements. We have operated on cats in these experiments. If this hypothesis is fundamentally sound, then we should get results regardless of the animal operated on. Unless we can prove experimentally that we have a basis for this operation, then we have no surgical right to subject these patients to such an operation. In other words, we are operating in an empiric manner. Another point with which all are familiar is: Any new treatment which orthopedic surgeons, general surgeons or anybody else has instituted for the treatment of spastic diseases of the extremities has always succeeded early in the history of that treatment.

Dr. Raymond W. McNealy, Chicago: I have only one thought in mind in discussion, and that is to bear witness to the fact that there have been reactions and improvements that have resulted in a number of cases in which operation was done by perivascular sympathectomy. The point I wish to make is that these results cannot be directly attributed to the essential part of the operation; that is, the stripping of the perivascular sheath. Comparable results have been obtained by section of the sensory nerve of the area, by subcutaneous injection of foreign protein material. So far as the operation itself goes, we must have more proof that it in itself is advisable.

Dr. Elliott C. Cutler, Cleveland: It has been most encouraging to note the great appreciation of the physiologic processes involved in the foregoing discussions. I should like to emphasize that the surgical treatment of angina pectoris is still in the experimental phase. The suggesion of Dr. Coffey that infiltration of the nervous structures during operation renders them more easily visible is of benefit to the surgeon. I cannot agree, however, with his reasoning that in the operation of removal of the superior sympathetic ganglion they interrupt the nervous arc on the efferent side, for stimulation at this point does not result in the signs and symptoms of angina pectoris. Dr. Lambert's proposal that alcohol be injected into the root ganglions, as advocated by others, seems unsafe; and, since it is a blind procedure, and one cannot be sure just what is affected by the injection, it should not be used during the experimental stage of the investigation of this matter. I would further emphasize the embarrassing sequelae that may follow operation in this field. Horner's syndrome is a small matter compared with the bizarre pain that may appear in the jaw, the neck or the chest. These pains do not seem to be explained by interfering with sensory nerves on the operative field but may result from circulatory changes due to interference with the vasoconstrictor apparatus or from neuronic degeneration in the sympathetic nerves extending back into sensory nerve areas. Dr. Ranson has questioned the return of pain on the right side in one of our patients submitted to a bilateral Jonnesco operation. I feel that this may be due to stimuli reaching the cord through the second dorsal ganglion.

Clinical Notes, Suggestions, and New Instruments

DOUBLE TUBAL PREGNANCY WITH RUPTURE OF BOTH TUBES

FRED E. CLOW, M.D., WOLFEBORO, N. H.

This case is reported because of two unusual features: the simultaneous occurrence of pregnancy in the two fallopian tubes, and rupture of both tubes with a considerable interval separating the two accidents.

H. U., an unmarried woman, aged 41, was taken suddenly ill, June 26, with severe cutting pain in the right lower quadrant of the abdomen, with faintness and nausea. The pain occurred while lifting a heavy chair. The physician who was called did little, evidently, beyond giving a hypodermic injection of a narcotic. The patient stayed in bed for three days and then returned to work. She noticed only some tenderness of the abdomen and general muscular weakness. July 10, a similar seizure occurred with pain in the left lower quadrant of the abdomen, faintness and vomiting. There was a slight vaginal discharge of dark blood. The same physician was consulted, but no treatment was prescribed save rest in bed and an ice bag to the abdomen.

July 30, the patient was brought to the hospital. She admitted that there had been no menstrual period for two months preceding the first attack of pain. Examination showed moderate distention of the abdomen, with dulness in both flanks and throughout the lower part of the abdomen. There was moderate distention and general tenderness and rigidity of the whole abdomen. Vaginal examination showed a soft, tender uterus, a boggy mass filling the pelvis, and a foul, dark discharge from the cervix. The temperature was 100.8 F. (39.8 C.); pulse, 108. The patient looked ill.

The abdomen was opened under ether anesthesia. The pelvis was filled with organizing blood clots. The right tube, ovary and appendix were glued together in a mass of fresh adhesions. The distal third of the tube was distended, with an opening 2 cm. long filled with blood clot and organizing material. The left tube was enlarged and, with the ovary, was similarly adherent to the uterus, bladder and small intestine. The left tube was removed, the abdomen cleared of clots, and the wound closed with a cigaret drain in each side of the pelvis.

Examination of the specimens showed, in the right tube, a distention of the distal half, with an obvious tear, filled with blood clot. The left tube was distended throughout. In the middle third was a tear 2 cm. long with a blood clot protruding through it. No trace of either fetus could be found.

The patient developed bronchopneumonia and died on the eighth day.

OCCUPATIONAL DERMATITIS FROM WOOD TURPENTINE*

CAREY P. McCORD, M.D., CINCINNATI

The best grade of turpentine is obtained by tapping the living pine trees collecting the resins that exude, and refining them. The turpentine so derived is "gum spirits of turpentine." This method is wasteful of timber, and its use is rapidly diminishing. Lumbering operations afford every year a vast lot of waste wood. Attempts are being made to produce a high grade of turpentine from these rejected woods and uprooted ancient stumps through steam distillation and destructive distillation methods.

The Naval Stores Act of 1924, recognizes these grades of turpentine:

"Gum spirits of turpentine," which means spirits of turpentine made from gum (oleoresin) from a living tree.

"Steam distilled wood turpentine," which is wood turpentine distilled with steam from the oleoresin within or extracted from the wood.

"Destructively distilled wood turpentine," wood turpentine obtained in the destructive distillation of the wood.

"Wood turpentine," which includes steam distilled wood turpentine and destructively distilled wood turpentine.

Wood turpentines in many respects are satisfactory for industrial uses. The costs of steam distilled wood turpentine and destructively distilled turpentine are lower than for gum spirits of turpentine. However, these new process turpentines are proving far more irritating to the skins of exposed workers; the destructively distilled is probably more irritating than the steam distilled wood turpentine.

In the distilling process, the liquid condensate flowing from the still, from which wood turpentine is subsequently derived, is termed "crude pyroligneous liquor.[1] This is a heterogeneous mixture of chemicals which includes acetic acid, formic acid, methyl (wood) alcohol, formaldehyde, acetaldehyde, acetone, acrolein, methylamine, furfuraldehyde, phenols, benzene, pyridine, isoprene, methyl-ethyl-ketone and some others. Many of these constituents present with the terpenes will readily be recognized as well known skin irritants. In the pyroligneous acid (one fraction of the crude pyroligneous liquor) the content of certain irritants is, approximately: acetic acid, 4 per cent; methyl alcohol, from 2 to 4 per cent; formic acid, 1 per cent; formaldehyde, from 1 to 2 per cent; furfuraldehyde, 1 per cent; methal acetate, from 2 to 4 per cent. The constituents of wood turpentine, of course, vary as to nature and percentage with every lot produced. With such an array of possible irritants, the occurrence of dermatitis among exposed workers is almost inescapable.

At the present time two outbreaks of wood turpentine dermatitis are under my observation. The exposed workmen are in unrelated industries, but utilize the same grade of distilled turpentine. In one factory about fifty workers are exposed to naphtha or to wood turpentine. For a period of twelve years, ending a few months ago, gum spirits of turpentine was employed as the paint solvent. During this period only about three cases of occupational skin disease developed every year. Recently wood turpentine was substituted for the grade formerly in use. During the last two months, thirty-five cases of dermatitis have been reported by the foreman. At this time ten cases are under my observation in this factory. The skin lesions exhibited in these cases have no specific characteristics. They resemble the dermatitis frequently seen from a great variety of chemicals, such as naphtha and benzene.

In this situation, immediate betterment may be had by returning to the use of gum turpentine. This measure promises only temporary relief, for the method by which gum turpentine is now obtained is doomed to industrial extinction. Freedom from this hazard will come about when in the distillation process careful fractionization is provided, in order that these numerous irritants may be kept apart from the relatively harmless terpene oils.

34 West Seventh Street.

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* From the Industrial Health Conservancy Laboratories.

[1] Bunbury, H. M.: The Destructive Distillation of Wood, London, Benn Brothers, Ltd., 1923, p. 104.

AN EVER-READY SUTURER

Myer M. Marbel, M.D., Chicago

The device here described and illustrated was developed with the idea of furnishing the physician a convenient, sterile and ever-ready combination for sewing up wounds. It embodies features of simplicity, efficiency and convenience that will afford increased skill and greater speed (from four to six stitches per minute), with better asepsis and less chance for contamination on the part of the operator. In caring for emergency wounds away from office or hospital, it lends itself to a high degree of convenience and safety.

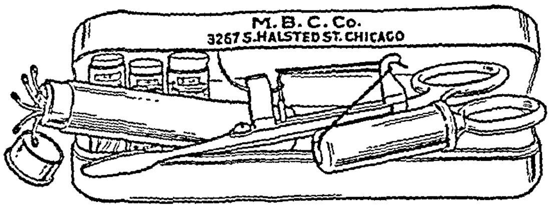

Fig. 1.—Suturer in case.

To one arm of the needle holder-hemostat is attached a tank holding 300 inches of suture material; the suture is immersed in alcohol and contained within a removable glass vial. To the second arm of the needle holder-hemostat is attached a threader with two vises that will automatically thread the needle and then anchor the suture material to the needle's eye. On and below the grip-jaws of the same needle holder-hemostat are scissors blades for cutting off the ends of each stitch made, as well as the anchored knot on the needle.

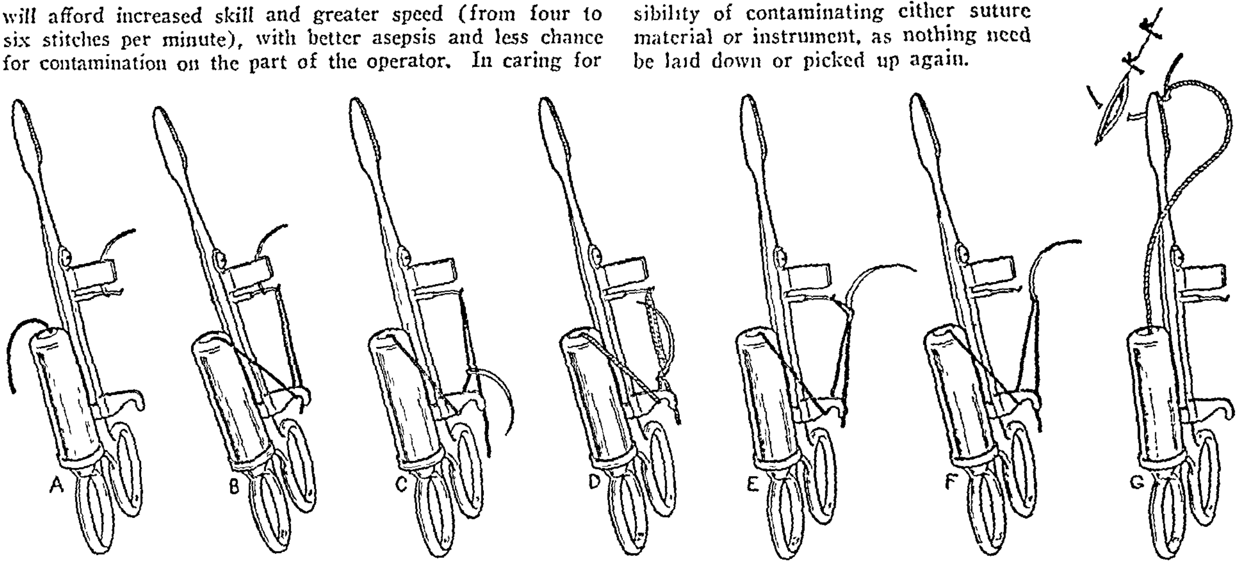

Fig. 2.—Manipulation: *A*, needle on hook threader, *B*, needle and catgut on hook threader; *C*, needle threaded; *D*, threaded needle sinking between lines for anchoring; *E*, needle half anchored; *F*, needle anchored; *G*, suturer in use

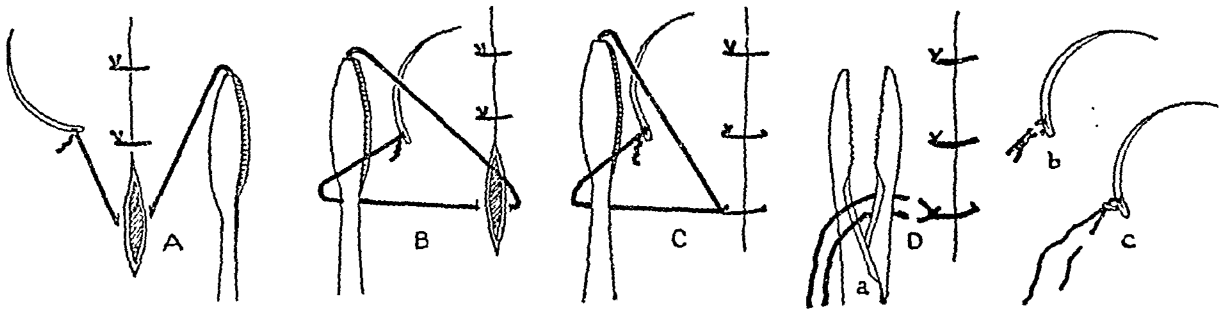

Fig. 3.—Further manipulation: *A*, two sides of catgut forming an angle (needle kept in left hand and instrument in right hand); *B*, knot (first half) made on triangle (needle goes through center of a triangle formed by catgut from wound as its apex and instrument as its base); *C*, knot (second half) closed on triangle; *D*, with scissors within suturer, ends (*a*) are cut off at wound; knot anchored (*b*) at needle's eye cut off and needle rethreaded for next stitch; *c*, too long end cut off before stitching is started.

These three additions to the ordinary needle holder-hemostat form a one unit instrument that enables the operator to do in an automatic manner, with fine technic, five or six stitches per minute.

The manipulation is as follows:

The needle is threaded.

The needle is anchored.

The knot on the triangle is made. (The needle goes through the center of a triangle formed by two sides of the suture material from the wound as its apex and the instrument as the base.)

Both ends of the stitch made are cut off.

The knot is cut off; the needle is anchored and rethreaded for the next stitch.

As the device is held in the right hand constantly with its tank side over the thumb, and the left hand is assisting, the operator is thus equipped for any number of stitches with a minimum loss of blood in profusely bleeding wounds. There is little possibility of contaminating either suture material or instrument, as nothing need be laid down or picked up again.

The *grip-jaws* are concave in the center and hold any curved needle at two points firmly and without danger of breaking it.

The *suture tank* is reloaded by unscrewing it, pushing out the empty bottle, and inserting a new fresh bottle.

The device is sterilized as a unit in its tightly closed metal container, either in dry heat or by boiling.

This device has given excellent satisfaction for skin stitches, circumcisions, repairs of the perineum in the homes of the poor, and all other types of suturing in which it has been used.

3267 South Halsted Street.

APHONIA FROM GOITER*

JOHN WILLIAM SHUMAN, M.D., LOS ANGELES

Loss of voice is a rare condition when it is caused by pressure of the thyroid gland. R. C. Coffey[1] does not remember having had a case of aphonia which was relieved by the removal of a goiter.

G. W. Crile[1] says: "About 4 per cent of our cases show a unilateral paralysis and often present some difficulty in speech but usually are thoroughly compensated. With the exception of malignant cases I have never had a case with complete loss of voice. The functional side of such a case must of course, be considered. A laryngoscopic examination would clear up this point."

E. S. Judd[1] cannot recall a case of this sort except one or two in which there was a hysterical aphonia which was relieved by operation; these, however, showed no definite paralysis of the cords on laryngoscopic examination.

REPORT OF CASE

A white man, aged 30, married, was admitted, May 28, 1925, to the service of the throat clinic with the complaint, loss of voice, of two months' duration, which had come on gradually.

The patient continued to lose weight until July 2, when, during consultation, a definitely enlarged thyroid was found and given as a cause for the aphonia.

The patient was nervous; he had tachycardia; the palpebral fissures were wide; the upper lids lagged; the pupils were dilated; the skin of the face and neck was cyanotic; effort increased the symptoms; when he attempted to speak, the superficial jugulars were visibly distended and the base of the neck ballooned, most markedly on the right side. Roentgen-ray findings by Dr. R. C. Shawhan were: increased density in the soft tissues in the thyroid region; lower poles on a line with the third dorsal vertebra. Major Frisbee found in the chest a dilatation of a bronchus on the right side, evidently due to obstruction and pressure from without.

July 14, Dr. Merrill, the throat consultant, found general congestion of the larynx and trachea; the cords moved well, and the aperture was symmetrical in all positions. The cords gave evidence of some thickening. July 28, he reported marked subglottic inflammation, with thickening of the mucosa extending into the trachea—a definite tracheitis.

September 17, James A. Mattison removed both lobes of the thyroid, and the isthmus were resected, sufficient thyroid being left next the trachea to take care of physiologic function. The capsule of the thyroid was firmly adherent to the gland, and the two lobes extended around the trachea posteriorly; with much difficulty the capsule was freed and the lobes were delivered. Dr Williams, the pathologist, reported "hypertrophy of the stroma, exophthalmic goiter," on the resected tissue.

The patient recovered his voice during the operation. His convalescence was uneventful and he was discharged, September 29, stating that he felt fine. He appeared well. His voice was clear, with good tone. He had no difficulty in breathing or deglutition. He had gained 12 pounds (5.4 Kg.), and his general condition had improved markedly.

2007 Wilshire Boulevard.

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* From the departments of surgery and internal medicine, National Soldiers Home Hospital.

* Read before the Santa Monica Branch of the Los Angeles County Medical Society, Feb. 9, 1926.

[1] Personal communication to the author.

Nature of Present-Day Health Movements.—It is clear that the policy of present-day health movements is increasingly directed to educational methods. It is with these objects that sanitary inspectors, welfare workers or health visitors are employed, that clinics are established and that industrial employers safeguard their employees. "Health Weeks," "Baby Weeks," lectures, literature, models, exhibitions, all help to create an educated public opinion, and we all of us appreciate the services of the statesman, distinguished cleric, or popular actor, or actress who is good enough, on occasion, to convey to the public the homely truths, which are so much more arresting when coming through these channels rather than through the usual ones.—Hope, E. W.: *Proc. Roy. Soc. Med.* **19**:29 (March) 1926.

Special Article

THE TECHNIC OF MEDICATION

A SERIES OF ARTICLES ON THE METHODS OF PRESCRIBING AND PREPARING, THE INDICATIONS FOR, AND THE USES OF VARIOUS MEDICAMENTS*

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CHICAGO

(Continued from page 1911)

GENITO-URINARY MEDICATION

URETHRAL MEDICATION

The administration forms for medication of the urethra in descending order of importance are: (1) lotions, (2) urethral suppositories, and (3) ointments.

Urethral Lotions.—These may be given by injection, instillation or irrigation. The mucous membranes of the urethra and of the bladder being highly sensitive, only mild solutions, such as could be tolerated in the eye, should be used on these membranes. Solutions should never be strong enough to cause more than temporary stinging or pain. The lotions should always be employed warm, as in acute cases, at least, cold solutions are liable to produce irritation, and heat increases the activity of all chemical agents. What is perhaps not sufficiently realized is the great absorbing power of the urethra, and that the absorbing power of the posterior urethra is even greater than that of the anterior urethra. This is in marked contrast to the very poor absorption from the urinary bladder, which is all the more interesting as the upper portion of the urinary tract, the ureter and the renal pelvis are again highly absorptive. These facts, which were established experimentally most especially by Macht,[67] and also by Magoun,[68] are of practical importance, especially in connection with the application of local anesthetics to the urethra, poisoning from which has been repeatedly observed clinically. Rather surprising is the great absorptive power of the prepuce, which must be borne in mind when local anesthetics are applied to it for surgical purposes.

Before using a urethral lotion the patient should always urinate, as the urine cleanses the mucous membrane of exudate and permits the remedy to come into more direct contact with the diseased part. It also lessens the liability of transportation of infectious material into the upper portions of the urethra.

Urethral Injections.—For self-administration of injections into the anterior urethra, the patient should be sitting well forward on the edge of a chair. If it is very important to obviate the possibility of the fluid entering the bladder, the patient should sit on a folded towel, which will help to cut off the deep urethra; usually, however, the cut-off muscle of the urethra suffices to secure this result. The penis should be held between the thumb and the fingers of the left hand. The meatus is opened by gentle pressure; the syringe (from 10 to 15 cc. capacity with blunt, conical tip) is introduced; and, while the thumb and index finger of the left hand make water-tight closure of the urethral orifice with the tip of the syringe, its contents are gently discharged into the urethra. At first only about 4 cc. should be injected at a time. In the later stages of the disease from 12 to 15 cc. may be introduced. Any air present in the syringe should be expelled, before injecting, by pressing on the piston while the tip of the syringe is elevated. As the first injection is chiefly for the purpose of cleansing, it may be permitted to escape immediately. After the second and third injections, the syringe is laid aside; and, while the left hand maintains closure of the meatus, the right hand attempts by gentle stroking pressure over the under side of the penis to distribute the solution to all portions of the canal. In this manner, the injection is retained for five minutes, when another syringeful may be injected and retained for an even longer period. These treatments are repeated in acute cases from three to six times daily, with diminution of the discharge morning and evening only. It must be remembered that sometimes the continued use of injections maintains a discharge, which may persist for a week after their discontinuance.

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* This is the twenty-sixth of a series of articles on "The Technic of Medication." When completed the articles will be assembled in book form.

[67] Macht, D. I.: Concerning the Absorption of Drugs and Poisons from the Ureter and Pelvis of the Kidney, J. Urol. **2**:481, 1918; On the Absorption of Drugs and Poisons from the Bladder and the Urethra, I, Absorption of Apomorphine and Morphine, ibid. **2**:43 (Feb.) 1918; II, Absorption of Various Alkaloids, Antiseptics, Local Anesthetics and Salts, ibid. **2**:211 (June) 1918; On the Absorption of Local Anesthetics Through the Genito-Urinary Organs, J. Pharmacol. & Exper. Therap. **16**:435 (Jan.) 1921.

[68] Magoun, J. A. H., Jr.: Absorption from the Urinary Tract, J. Urol. **10**:67 (July) 1923.

Should a sedative injection be desired, a 0.5 per cent solution of cocaine hydrochloride in equal parts of mucilage of acacia and water might be useful. For local anesthesia of the urethra, cocaine should not be used, as it is incalculably toxic. Though procaine hydrochloride U. S. P. is relatively inefficient when applied to intact mucous membrane, it is comparatively safe. Complete urethral anesthesia cannot be expected from it. One injects into the urethra from 8 to 15 cc. of a 2 per cent procaine solution, to which 2 per cent of sodium bicarbonate might well be added, as it intensifies the action of the alkaloid, and from 3 to 5 drops of the 1:1,000 solution of epinephrine. The latter is added just before use, as the mixture decomposes on standing. As the solution should remain in the urethra from fifteen to thirty minutes—the longer the better—a clamp for the penis (such as Stockmann's) is desirable. To lessen the sensitiveness of the deep urethra, an injection of 15 cc. of the solution is forced into the urethra five minutes after the first one has been applied. This will enter the membranous portion of the urethra and should be permitted to act for twenty or twenty-five minutes. As procaine is a hydrochloride and the chloride ions would precipitate and inactivate a succeeding silver nitrate instillation, a procaine nitrate solution (5 per cent) should be employed instead, the alkali should be omitted, and the epinephrine, which is likewise used as hydrochloride, dispensed with for the same reason. To anesthetize the deep urethra completely, infiltration of the tissue surrounding the prostate by from 75 to 100 cc. of 0.5 per cent procaine solution is required. A 4 inch needle is used for the purpose. For anesthesia of the bladder, instillation of anesthetic solutions is entirely ineffective for reasons now well understood; and parasacral injection must be employed.

Antiseptic lotions must never be employed with the idea of eradicating an established infection. This is impossible. All gonorrhea heals, if it heals at all, through the natural reaction of the infected organism. This reaction can be favored by our therapeutic means; and we must be ever careful not to hinder it. The more acute the inflammation, the milder should be the therapy. In acute gonorrhea, injections of mild antiseptics without the use of a catheter are chiefly of value for cleansing purposes. Regarding irrigations at this stage, opinion is divided. In the chronic stage, astringent injections, irrigations, and instillations combined, if required, with dilation are undoubted means of expediting a cure. It is an important principle to treat all the affected portions simultaneously. Thus, to treat the anterior urethra only, when the posterior urethra is also affected, leads to so-called relapses.

The most popular antiseptics for injection into the urethra in case of gonorrhea are silver compounds, because silver is believed to be specifically gonococcidal. The nonastringent silver compounds are preferred in the early stages, while gonococci are present, as the discharge obviously helps in the elimination of the invading gonococci. Not a checking of the discharge, but of the proliferation of the gonococci, is our aim. The more profuse the discharge, the milder should be the injections, and vice versa. Mild silver protein, in recently prepared solution of 2, 5 and even 10 per cent strength, and strong silver protein in 0.25, 0.5, 0.75 and rarely 1 per cent strength are favorite agents for this purpose. The milder remedy and the lower concentration are employed at first; and the concentration, strength of agent, and duration and retention of the injection are gradually increased as the condition becomes less acute.

To use powerful germicidal, disinfectant remedies in the treatment of this or other infected membrane is veritable folly: for the micro-organisms that have invaded a membrane cannot be killed, while the membrane will surely be injured. Better to leave the membrane in peace than to treat it *cum furore.* Only for prophylactic or abortive treatment are germicidal applications admissible. It is true, they irritate; but, if they succeed in exterminating the pathogenic organisms while they are still on or in the surface, they may check the further development of the disease. Thus, 10 per cent strong silver protein in glycerin solution, instilled into the fossa navicularis by means of a medicine dropper so as to penetrate the anterior urethra about half an inch, is said to be an efficient prophylactic of gonorrhea, provided it is employed early enough after the [illegible]. As a preventive against [illegible] ointment" of the National Formulary, the ointment of mild mercurous chloride (30 per cent), should be used at the same time.

Astringents—from 0.2 to 1 per cent zinc sulphate, or 1:2,000 silver nitrate—should not be employed until the later stages after the gonococci have disappeared from the discharge because, though astringents promptly lessen the discharge, they create a false sense of success and security; for, as soon as the treatment is stopped, the discharge is liable to recur. Their action is too superficial to destroy the gonococci that have invaded the tissue; and, by checking the discharge that might have carried them away, they may actually prolong the disease and even invite complicating deep invasion. Perhaps the mildest of the astringent lotions is Ricard's injection, a "shake mixture" compounded with 0.5 per cent of zinc sulphate and 1 per cent of lead acetate, with a little mucilage of acacia, to favor suspension, in rose water. To this, 2 per cent each of tincture of gambir and of tincture of opium were added in the original formula. This mixture is chemically incompatible but is entirely admissible clinically, as the finely precipitated lead sulphate is believed to exert a beneficial protective influence on the inflamed membrane. There is a slight excess of lead acetate.

Instillations.—Instillations are employed to medicate limited portions of the urethra with small quantities of rather strong solutions. They must not be used in acute cases or in the presence of acute complications of chronic cases. They are, on the other hand, very useful in the chronic stage, most especially in chronic posterior urethritis. While the urethral injections described above are generally entrusted to the patient for self-administration, instillation of medicaments into the posterior urethra requires the aseptic technic of the physician. When the three-glass test or the symptoms, such as recrudescence of the discharge, and burning pain in the perineum, indicate involvement of the deep urethra, these instillations are administered by means of a Guyon or analogous syringe, or a catheter is passed down to the posterior urethra (from 5½ to 6 inches), but not far enough to enter the bladder. Rather strong solutions are employed, generally from 1 to 2 per cent solutions of silver nitrate, with the intention of inducing a curative hyperemia; indeed, of substituting an acute inflammation with a tendency to heal for the chronic inflammation without this tendency. From 5 to 20 drops is instilled if the prostatic urethra alone is to be treated; from 5 to 10 cc., if the base of the bladder—which is also usually affected—is to be medicated likewise. In the latter case, it is well to leave a little urine in the bladder to protect the more sensitive fundus. In removing the catheter, care must be taken to avoid having any of the solution drip along the anterior urethra. This is done by slightly withdrawing the piston of the syringe before removing the catheter. There is generally considerable burning on urination, and there may be increase of the discharge during the first twenty-four hours following an instillation. If the reaction is severe, rest in bed, an opium suppository, and heat to the perineum should be employed. These instillations do not have to be repeated oftener than twice a week. The next instillation should certainly not be given until all irritation produced by the previous instillation has completely disappeared.

Such instillations are also useful to lessen the congestion of the deep urethra, which is a frequent cause of irritable weakness of the sexual functions, resulting in deficient erection and premature ejaculation. They also, of course, have a psychic value in these cases. Instillations into the anterior urethra are advantageously employed in those cases of chronic gonorrhea in which there is found localized tenderness and induration on passage of a bulbous bougie. Such areas not only maintain a chronic discharge, but are liable to be the beginning of strictures.

Irrigation.—Urethral irrigations, though employed according to Janet's recommendation within the first thirty-six hours of an attack of gonorrhea, are probably best avoided in fresh cases of gonorrhea. They irritate too much and are liable to lead to posterior urethritis, prostatitis and epididymitis. When, however, the discharge continues to carry gonococci, and when these parts are affected, they may be used with advantage. They should always be administered by the physician. The apparatus consists of an irrigating reservoir raised not more than 4 feet, less if the pressure produces pain; a Valentine or Chetwood two-way blunt tip glass urethral nozzle, connected by means of 8 feet of rubber tubing to the irrigator, and another shorter piece of rubber tubing leading from the outflow tube to the waste-pail. A rubber apron with a hole for the penis protects the clothing of the patient, who may stand or be seated on the edge of a chair for irrigation of the anterior urethra, but should be lying down for posterior irrigation. The glans penis and the lips of the meatus should be washed with soap and water, followed by 1 : 5,000 mercuric chloride solution. A hot solution of potassium permanganate, from 0.25 : 1,000 to 1 : 1,000, is most commonly employed. The chief effect of this solution is not so much a destruction of the gonococcus as the production of a "serous reaction," a copious thin secretion which, it is asserted, clears the mucosa quite rapidly of gonococci. This, however, is not always the case; and, if gonococci persist, it is well to change after a while to silver nitrate, 1 : 12,000 to 1 : 8,000, or mercuric oxycyanide, 1 : 3,000. The latter is conveniently prepared by adding 30 cc. of a 1 per cent stock solution to 1 liter of hot water. The patient should, as usual, empty his bladder before the irrigation. The operator, holding the penis behind the glans between the thumb and forefinger of the left hand, and compressing the rubber inflow tube between the thumb and index finger of the right hand, inserts the nozzle into the meatus. He then releases the inflow tube, at the same time closing the outflow tube by means of his right little finger. As soon as the urethra is filled, the inflow tube is pinched and the outflow tube released. Thus, the urethra is alternately distended with solution and emptied, without removal of the nozzle. For irrigation of the deep urethra, the anterior urethra is irrigated as just described, and then a catheter is passed until the urine just escapes, when it is withdrawn about an inch, and from 100 to 350 cc. is gently injected through the posterior urethra into the bladder. The catheter having been then removed, the patient empties the bladder, thus passing the solution once more through both posterior and anterior urethra. These hot irrigations should be continued until the discharge is free from gonococci. In very resistant cases, irrigations should be combined with dilation.

Urethral Suppositories.—These little rods, pointed at one end, also known as medicated bougies, generally made of glycerogelatin, may be inserted into the urethra, where they melt, releasing their medication. They are made in two lengths: either 7 cm., weighing 1 Gm., or 14 cm. long, weighing 2 Gm. The agent remains in contact with the mucous membrane for quite a time, which may secure more thorough medication, but also produces greater irritation. Strong silver protein (5 per cent) bougies may be used in venereal prophylaxis. For treatment, 0.1 per cent silver nitrate, 1 per cent zinc sulphate, or 1 per cent resorcinol bougies are employed.

Ointments.—Ointments may be applied to the urethra by means of a sound smeared with the medicament; or else by having the ointment dispensed in a collapsible tube and introducing it into the canal by means of a small, soft rubber tube, as described in connection with rectal medication by ointment. On the whole, ointments do not yield better results and are more troublesome than bougies.

The bladder and urethra may be medicated in a very mild degree by the peroral administration of certain drugs that are freely eliminated in the urine. Of course, the degree of medication must of necessity be much less than when a remedy is applied locally, and the effect of the agent on the alimentary tract and system has to be reckoned with; but the constancy of the medicinal impression may counteract to a certain degree its feebleness.

(To be continued)

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SATURDAY, JUNE 26, 1926

GOITER PROPHYLAXIS IN NONGOITROUS AREAS

For the orderly progress of medicine, "novelties" of diagnosis and treatment should be investigated thoroughly as promptly as possible. This is true not merely because of the desirability of securing effective helps in practice at the earliest opportunity and of revealing deceptions or disappointments before false hopes are engendered; but also because careful investigation usually discloses the limitations of new procedures and sometimes points the way to their betterment. Illustrations of this may be found in the more recent histories of the use of arsphenamine, insulin, cholecystography and various antitoxic serums. The expectations of their early exploitation have not always been realized completely; yet this has led to improvements in technic and limitations of application that will in the long run render a more permanent and helpful contribution to the medical art.

The so-called thyroid or goiter surveys that have been initiated in various parts of the world during the last few years have disclosed an unexpected incidence of thyroid enlargement.[1] It is believed that the adolescent goiter or thyroid hyperplasia is a compensatory reaction arising in the course of a metabolic disturbance and immediately dependent on a relative or absolute deficiency of iodine. The efficacy of small doses of this element in preventing the expected incidence of such thyroid enlargements has been abundantly demonstrated. As an outcome, "goiter prophylaxis" has been instituted particularly among school children in many regions. It has also been attempted on a wholesale basis among larger groups of the population through the common use of iodized table salt or the treatment of potable water supplies with iodine. Of late, this procedure has provoked some protests,[2] owing to the alleged possibility of producing symptoms of hyperthyroidism in persons who do not require iodine medication.

According to Hayhurst,[3] goiter is associated with districts of glacial formation in contradistinction to districts of nonglacial formation. Districts of glacial formation contain less iodine in the soil and in the water supply than do districts of nonglacial formation, because the soluble sodium salts of iodine have been removed by the melting ice. The goitrous area in the United States is that part of the country which was covered by the three great ice sheets, the lower border of which extended from the eastern part of New York State, south below Cincinnati and nearly to the Pacific coast.[4]

How unwarranted it may be to assume infrequency of simple goiter or goiter of a mild type along the sea coast merely because of proximity to the ocean has recently been indicated in The Journal[5] in relation to conditions in New Zealand. Mere geographic location is not the only factor that protects or involves. The distribution of iodine in the soils and foods is highly significant. The actual facts of goiter incidence therefore help to prevent a false sense of security in a supposedly "safe" locality. They may also avert unnecessary concern in other regions. Thus, observations on about 12,000 school children in New York show a relatively small number of deviations from the thyroid normal, so that the metropolis can truly be termed a "nongoitrous" center. According to Frances Cohen,[1] who made the survey, the incidence of simple goiter in school children and in the older group of women, and the investigation into the conditions of iodine intake which determine endemic centers of goiter, do not justify a conclusion that New York City is an endemic center of goiter. The mild sporadic cases of simple goiter that occur among school children seem to be dependent on a relative insufficiency of iodine, due mainly to a physiologic cause; namely, puberty. Thyroid enlargements occur in New York about three times more frequently in girls than in boys. Simple goiter among children in New York reaches its peak at puberty, between the ages of 13 and 15, in both girls and boys. The percentage of incidence of normal glands seems to vary inversely with the degree of activity of the menstrual cycle. The mild cases of simple adolescent goiter observed among children in New York seem to show, in the case of girls, a distinct tendency to spontaneous regression after puberty; in that of boys, a complete regression.

Such observations, it is argued, do not justify a recommendation for the adoption of general municipal or school administered prophylaxis as a public health measure in New York. Individual prophylaxis, the early recognition and cure by individual physicians, and public health education in goiter prevention and cure would seem adequate. There is presumable wisdom in Frances Cohen's advice that, because of the comparatively small incidence of simple adolescent goiter in New York, its mild type and its tendency to regress spontaneously after puberty, great care should be taken not to alarm the public by unduly or unwisely stressing the conditions.

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[1] A review of some of these is given by Cohen, Frances: Goiter in Children in New York City, Am J. Dis Child **31:** 675 (May) 1926

[2] Hartsock, C L · Iodized Salt in the Prevention of Goiter, J A M. A **86:** 1334 (May 1) 1926 Kimball, O P. Induced Hyperthyroidism, ibid **85:** 1709 (Nov 28) 1925. Jackson, A S Iodine Hyperthyroidism, Am J. M. Sc. **170:** 271 (Aug) 1925. Goiter Prophylaxis, editorial, J. A M A **85:** 1971 (Dec 19) 1925

[3] Hayhurst, E · Simple Goiter—An Iodine Starvation Disease, Ohio Conference on Water Purification, State Dept. Health, Third Annual Report, Nov 21 24, 1923, pp. 76 82

[4] McClendon, J F, and Hathaway, J C · Inverse Relation Between Iodine in Food and Drink and Goiter, Simple and Exophthalmic, J. A. M. A **82:** 1668 (May 24) 1924.

[5] Endemic Goiter: The Lesson from New Zealand, editorial, J. A. M A **86:** 953 (March 27) 1926.

THE FORMATION OF BILE PIGMENT

The old story of the bile pigments within the body has been entirely rewritten. The new presentation has not been the result of a single stroke of experimental good fortune or scientific intuition, but has been developed chapter by chapter through substantial investigation, mostly in American laboratories. Experimental technic has played a significant part in the success of the newer discoveries. They were not the incidental by-product of the clinic.

The liver has lost its extreme dominance in relation to the genesis of the bile pigments. Reviewing the subject little more than a year ago, Rich[1] of Johns Hopkins University felt justified in stating that we are unable to speak with certainty concerning the exact rôle of the liver in normal bile pigment formation except so far as we are sure that the epithelial liver cell is not necessary for the formation of the pigment. The latter was thus made independent of the activity of the hepatic tissue. Rich remarked that previous to 1903, whenever it was suggested that perhaps the liver cells merely excrete the bile pigment which is made somewhere outside them and carried to them by the circulation, it seemed rather easy to refute the suggestion by the statement that there is no bile pigment in the blood stream normally—not even in the portal vein. The important demonstration by Gilbert, Herscher and Posternak[2] that normal human serum does contain bile pigment removed this well worn prop from the theory that the pigment is made within the liver cells. In 1913, van den Bergh and Snapper[3] applied Ehrlich's diazoreaction to the quantitative study of bilirubin in the body fluids. This work, Rich adds, really marked an epoch in the study of bile pigment under physiologic and pathologic conditions, for it placed in the hands of every one interested in the matter a simple and extremely sensitive test for bilirubin in albuminous fluids. With the van den Bergh test, the observation of Gilbert and his co-workers has been confirmed repeatedly, and it is now a perfectly familiar fact that bilirubin is normally present in human plasma in amounts that vary within fairly definite limits.

Mann and his collaborators at the Mayo Foundation have greatly promoted these convictions by their beautiful demonstrations that bilirubin is formed in the body even after the surgical removal of all the intra-abdominal organs, thus conclusively demonstrating that there is an extra-abdominal source of bilirubin and that neither the liver nor any other of the intra-abdominal organs is necessary for its formation. In rapid succession they[4] ascertained some of the localities involved. A comparison of the bilirubin content, as measured by the spectrophotometer, was made of the arterial and venous blood of most of the large organs of the body and other isolated vascular areas. In most of the vascular areas, the bilirubin content of specimens of blood from the two systems was the same, but the bilirubin content of the venous blood was greater than that of the arterial blood of spleen and bone marrow, which proves that bilirubin is formed in these organs at least. The latest reports from the laboratories at Rochester, Minn., give added support to the belief that the blood pigment hemoglobin can act as a precursor of bilirubin in the sites of formation just referred to.[5] The appearance of hematin, which the Mayo Foundation investigators discovered in connection with the active formation of bilirubin, would indicate that the process of disintegration of hemoglobin into hematin and globin occurs more rapidly than the formation of bilirubin from hematin. Thus, the presence of hematin in the blood in disease might easily be interpreted as evidence of increased destruction of hemoglobin. This interpretation, we are reminded, would apparently be of considerable importance in the study of hemolytic icterus and also of value in differentiating the various types of anemia. A summary of our knowledge thus should indicate that: the liver is not the principal seat of formation of the bile pigments; bilirubin is formed in the spleen and marrow; bilirubin is formed from hemoglobin; hematin appears as an intermediate product in the formation of bilirubin from hemoglobin.

RESPIRATORY CHANGES IN AIRPLANE FLIGHTS

The modern world sometimes calls for the adjustment of persons to environmental conditions that represent extremes in contrast with usual circumstances of everyday life. Man is penetrating the tropical jungles and likewise being transported literally to the uttermost ends of the earth, not only in the arctic but also in the antarctic regions. He is obliged to encounter heat and cold in their severest manifestations; nor is this all. Rising above the level of the sea anywhere up to the height of seven miles, already attained, he is confronted with a gradually attenuated atmosphere and a consequent lowered partial pressure of oxygen. It has long been known that high altitude is provocative of disagreeable symptoms that may become aggravated into severe distress. The conquest of the higher air has necessitated the acquisition of complete understanding of the physiologic effects of altitude. There was a time not long since when these were catalogued under the designation of "alpine physiology" in recognition of the circumstance that the study of the subject had largely been confined to investigations in mountaineering, notably in the high Alps, where some of the classic researches were conducted for many years. Today, with the advent of the airplane and the dirigible, a science of aviation physiology is in process of development.

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[1] Rich, A. R.: The Formation of Bile Pigment, Physiol. Rev. **5**: 182 (April) 1925.

[2] Gilbert, Herscher and Posternak: Sur la réaction de Gmelin dans les milieux albumineux, Compt. rend. Soc. de biol., 1903, p. 530.

[3] Van den Bergh and Snapper: Die Farbstoffe des Blutserums, Deutsches Arch. f. klin. Med. **110**: 540, 1913.

[4] Mann, F. C.; Sheard, C.; Bollman, J. L., and Baldes, E. J.: The Site of the Formation of Bilirubin, Am. J. Physiol. **74**: 497 (Nov.) 1925.

[5] Mann, F. C.; Sheard, C.; Bollman, J. L., and Baldes, E. J.: The Formation of Bile Pigment from Hemoglobin, Am. J. Physiol. **76**: 306 (April) 1926.

The fundamental thesis that has been stressed places emphasis on anoxemia, due to a fall in the oxygen tension in the lungs, as the chief provocative factor in the distress that may arise at great heights, whether on mountain tops or in airships of one sort or another. It is not always possible or convenient to establish laboratories in such locations; consequently, physiologists have attempted to imitate the expected atmospheric conditions of altitude by the use of chambers in which the atmospheric pressure can be reduced to any desired magnitude. Cold and wind can thus be eliminated in the consideration of the fall in oxygen tension Similar results have been attempted in closed chambers where rebreathing the contained air also brings about reduction in the oxygen supply. Both methods have been extensively applied in the examination of candidates for the aviation service.[1]

It has been clearly established that high altitudes or low barometric pressure when first encountered may interfere with the normal workings of the human machine. The consensus developed from such studies is that the physiologic effects noted at high altitudes are due to the lack of oxygen resulting from the lowered partial pressure of oxygen. Schneider and Clarke[2] of the School of Aviation Medicine at Mitchel Field have remarked that occasionally doubt is expressed as to whether the effects of a flight to a high altitude are the same as those produced when these altitude changes are simulated by means of the low pressure chamber or by the rebreathing method of producing anoxemia. Changes in the composition of the alveolar air of the lungs give information regarding the extent of ventilation of the lungs, the supply of oxygen, and chemical changes in the blood. Hence, they have determined the changes in the alveolar carbon dioxide during flights to an altitude of 15,000 feet. The technic of making satisfactory physiologic observations with delicate apparatus during a flight in an airplane is particularly difficult because of the cold and wind.

The ventilation of the lungs was increased in some instances at altitudes of 2,000 and 3,000 feet, but in one case not until 10,000 feet had been passed. The alveolar carbon dioxide tension remained below normal for some time after the flight. A comparison of the respiratory conditions of airplane flights with those of anoxemia produced in other ways shows that the changes are chiefly those of lack of oxygen. In airplane flights, the alveolar oxygen tension is slightly higher than under conditions of simulated altitude. The difference is attributed to the favoring action of wind on pulmonary ventilation. However, the sensations of the persons when at 15,000 feet were not alone those of anoxemia, although there were observed an increase in breathing, especially frequent deep sighs, and occasionally periodic breathing of the Cheyne-Stokes type. One subject developed a headache, another was nauseated and vomited several times, and still another noticed that slight exertion produced dizziness. All found the effects of the cold quite severe; the temperature in the cockpit frequently fell to between 10 and 15 F. The face, neck and hands were most affected; but the legs and feet were also often noticeably cold. These are incidents independent of the barometer; they can in large part be averted by suitable clothing and protective devices. Anoxemia, on the other hand, calls for an artificial supply of oxygen when a man leaves the regions in which it is furnished under adequate conditions.

Current Comment

MUSCLE HEMOGLOBIN

Hemoglobin, oxygen carrying and the blood are so commonly considered in an interrelated way that it is not easy to divorce this respiratory pigment from immediate connection with the circulation. It has been known for many years, however, that the muscles contain a red pigment that is not removed by merely washing out the residual blood from the contractile tissues. Recent investigations by Whipple[1] and his collaborators at the University of Rochester, N. Y., point to the probability that muscle hemoglobin and blood hemoglobin are almost indistinguishable, if indeed they are not chemically identical. Accordingly, it becomes important to ascertain the origin, function and possible interrelations of the muscle pigment. The muscular tissues represent a large fraction of the body mass; from a quantitative standpoint, therefore, the function of any component may be significant even if it is present in comparatively small proportions. Representing total circulating hemoglobin of the dog as 100 Gm., the Rochester group found the total muscle hemoglobin amounting to from 10 to 80 Gm. in widely different conditions. They regard it as obvious that muscle hemoglobin is of importance whether one studies the end-products of hemoglobin disintegration or the parent substances suitable for construction into mature hemoglobin. Muscle hemoglobin must be considered in any study of body pigment metabolism. The muscles appear to have a great range in their muscle hemoglobin content which appears to depend on exercise and to determine largely the latent muscular power. This is in harmony with the popular assumption that "flabby" muscles are as a rule pale. The heart is much more uniform in its muscle hemoglobin content, just as its work is more steady and uniform than the work of the skeletal muscles. Whipple has found that anemia demands cannot rob the striated muscle of its hemoglobin. The body ranks the necessity for muscle hemoglobin maintenance on a par with the need for blood hemoglobin production, and from the standpoint of survival of the individual Whipple regards that as a fortunate circumstance. It also shows the importance of muscle hemoglobin in body economy and general pigment metabolism. Muscular paralysis is followed by fairly rapid loss of muscle hemoglobin. Evidently exercise is more important than anemia in determining the content of muscle hemoglobin.

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[1] Manual of Medical Research Laboratory, War Department, Air Service, Division of Military Aeronautics, Washington, D. C., 1918.

[2] Schneider, E. C., and Clarke, R. W.: Respiratory Changes During an Airplane Flight to High Altitudes, Am. J. Physiol. 76: 354 (April) 1926.

[1] Kennedy, R. P., and Whipple, G. H.: The Identity of Muscle Hemoglobin and Blood Hemoglobin, Am. J. Physiol. 76: 685 (May) 1926. Whipple, G. H.: The Hemoglobin of Striated Muscle, I, Variations Due to Age and Exercise, ibid., p. 693; II, Variations Due to Anemia and Paralysis, ibid., p. 708.

VITAMIN B AND "VITALITY"

A word for popular writers on health topics to conjure with is "pep," defined according to the special point of view of the enthusiast who uses it. Basal metabolism is in some respects an index of health. Deviations from the normal may indicate conditions that are disagreeable if not actually disastrous. Readjustment of a disordered basal metabolism is not always easy without drastic measures. A recent writer[1] has remarked that while no satisfactory measure of an animal's vitality can be said to have been discovered, it is becoming increasingly evident that the intensity of the basal metabolism varies directly with an animal's physiologic condition. For example, athletes are known to have a higher basal metabolism than untrained persons, and men a higher basal metabolism than women; debilitating diseases are known to lower the basal metabolism, while convalescence is accompanied by an increased metabolism. During the excessive enthusiasm a few years ago for the then newly discovered vitamins and the exalted hope of great physiologic accomplishment through their administration in a therapeutic or prophylactic way, these food factors—notably the vitamin B of yeast—were often expected to "pep up" the jaded person. Somehow it was assumed that the vitamin must "stimulate" one function or another. The actual investigations have, however, been disappointing in some ways. Secretion has not as yet been discovered to be stimulated or "pepped up" in any way, although efforts have been directed to a study of the possibility, notably by Cowgill[2] at Yale University. Deuel and Weiss[3] of Cornell University Medical College have demonstrated that deprivation of vitamin B does not of itself lower the basal metabolism, nor is the latter altered by large doses of vitamin-bearing products. These results were secured on dogs. Now Mitchell and Carman[1] of the University of Illinois have demonstrated that the ingestion of excessive amounts of vitamin B up to about ten times their estimated requirements does not appreciably modify the basal heat production of rats. Therefore, so far as the basal heat production is a measure of "vitality," it may be concluded that the ingestion of amounts of vitamin B in large excess over the minimum requirements for growth and continued well being does not benefit an animal.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Supreme Court Upholds Birmingham Ordinance.—The Supreme Court of Alabama rendered a decision, June 10, upholding the city commission of Birmingham in abolishing, by ordinance, Nov. 17, 1925, the office of municipal surgeon. The case was appealed from the Jefferson Circuit Court in equity on the ground that it was an attempt to evade the civil service law. Justice Summerville, of the supreme court, said, it is reported, that although an office is properly subject to civil service regulations, so that an employee cannot be removed except for cause and in accordance with regulations, the municipal government may, nevertheless, abolish the office or position and thereby remove the incumbent, provided the ordinance or resolution is adopted in good faith, and provided the office is not created by the municipal charter or by general law.

CALIFORNIA

Chinese Herbalist Fined.—T. How Wing, a Chinese herbalist of Los Angeles, was arrested recently on a charge of violating the medical practice act; he pleaded guilty and was fined $100.

Physician Cited.—A citation has been issued by the state board of medical examiners calling Dr. Jacob L. Owen, Los Angeles, before the board at the July meeting to show cause why his license should not be revoked for an alleged violation of the Harrison Narcotic Law.

Award of Clinical Prize.—The California Medical Association recently awarded its clinical prize of $150 to Dr. Emil Bogen, Los Angeles, for his essay on "Arachnidism, a Study of Spider Poisoning." No prize for original research was awarded. The council decided to continue the prize committees and to offer similar prizes to be awarded at the 1927 meeting.

Present Status of Poliomyelitis.—The state board of health bulletin, June 5, tabulates the number of cases of poliomyelitis in California in the last five years. There was a total of 283 cases reported in 1921, the largest number until 1925, when the total was 802. In the first five months of 1926 there were fifty-eight cases reported, the largest number in the corresponding period in any of the preceding six years, except 1925, when the number was ninety-nine.

Society News.—The Los Angeles County Medical Association devoted the May 6 meeting to the subject of smallpox; Dr. George Parrish discussed "Management of the Recent Epidemic"; Dr. George M. Stevens, "Hospital Care of Smallpox," and Dr. Michael S. Creamer, "Lessons to Be Learned from the Recent Epidemic."——Dr. George Piness, Los Angeles, addressed the San Diego County Medical Society, June 8, on "Allergic Manifestations, Diagnosis and Treatment."

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[1] Mitchell, H. H., and Carman, G. G.: Effect of Excessive Amounts of Vitamin B on the Basal Metabolism of Rats of Different Ages, Am. J. Physiol. **76**: 385 (April) 1926.

[2] Cowgill, G. R., and Mendel, L. B.: Am. J. Physiol. **53**: 131 (Nov.) 1921. Cowgill, G. R.: Vitamin B as a Factor in Nutrition, Nation's Health **5**: 509 (Aug.) 1923.

[3] Deuel, H. J., Jr., and Weiss, R.: The Basal Metabolism in Vitamin B Deficiency, Proc. Soc. Exper. Biol. & Med. **21**: 456 (May) 1924.

New Health Officers.—The state board of health notes in its weekly bulletin the following changes in health officers:

Dr Smith A. Quimby succeeds Dr. George G Hawkins as health officer of Madera County
Dr Robert J. Evans, Jr, succeeds Dr George McKenzie as city health officer of Concord
Dr. Gordon L. McLellan has been appointed city health officer of San Leandro
Dr Glenn T. Logsdon succeeds Dr Henry F. Crandall as city health officer of Oceanside
Dr Harrison M Hawkins succeeds Dr Marcus W Pascoe as city health officer of Taft
Dr Edgar R Brigham succeeds Dr C A Tillotson as health officer of Dinuba
Dr Frederick R Rhodes succeeds Dr Foster M Hull as health officer of Culver City
Dr George Rothganger succeeds Dr Emily Emery as city health officer of Emeryville
Dr Francis F Malone succeeds Dr Lawrence L Lindsey as city health officer of Calipatria
Dr Fred R DeLappe, Modesto, succeeds Dr Benjamin F. Surrhyne as health officer of Stanislaus County

FLORIDA

Smallpox Embargo Removed.—The health restrictions and shipping embargo placed against Florida ports by the Bahama Islands on account of the recent smallpox situation were removed early in May

Hospital News.—The citizens of Fort Pierce have voted a bond issue of $250,000 for a municipal hospital, the construction of which, it is expected, will be undertaken this fall.——Dr Grover C Hardie has been appointed medical director of the Fort Pierce Hospital

Society News.—At the sixth annual meeting of the Florida Railway Surgeon's Association, Gainesville, May 3, Dr Joseph N. Fogarty, St Augustine, was elected president; Dr. George C Tillman, Gainesville vice president, and Dr Edmund W. Warren, Palatka, secretary-treasurer, the next meeting place will be West Palm Beach——Dr. Roy O Cooley has been elected president of the Palm Beach County Medical Society, Dr Alice R Miller, vice president, and Dr Wilbur O Arnold, secretary-treasurer.

ILLINOIS

Chiropractor Sentenced.—A B Croessman, a chiropractor of Rockford, was recently fined $100 and sentenced to one day in jail for practicing without a license, it is reported.

Student Nurses Strike.—Twenty-five student nurses at the Galesburg Cottage Hospital, Galesburg, went on strike, June 17, it is reported, in protest to the dropping of three nurses from the training school who failed to pass the examinations The nurses were given time to return to their studies and work without penalty, only one returned, the other twenty-four student nurses were expelled by the hospital board Meanwhile, the patients in the hospital are being cared for by graduate nurses from nearby cities

Annual Beaumont Award.—The first Annual Beaumont Award will be made in 1927 by a faculty committee of the University of Illinois School of Medicine for the most important clinical or research work contributed during the year in the field designated The award is available to workers in any institution and is not confined to members of either faculty or student body of the University of Illinois Manuscripts do not have to be entered specifically for the award or submitted to the faculty committee The award is to be granted by the committee after considering all investigations published during any year in periodicals in the United States The object of the donor, Dr. Frank Smithies, was to encourage investigations of the alimentary tract function The award will be not less than $100

Chicago

Liquor Licenses Revoked.—Mr E C Yellowley, local prohibition administrator, recently announced the revocation of the alcohol permits of the following, it is reported·

Dr Charles A Lapin, 613 South Sacramento Boulevard
Dr Alexander B Raff, 817 Independence Boulevard
Drs Nathan N Fox, 1317 Independence Boulevard, and Nicholas I. Fox, 170 Taylor Street, Oak Park
Dr Henry C Welcker, 2742 North Clark Street
Dr Alexander Levin, 2719 Crystal Street
Dr Martin A Schupmann, 2000 North Halsted Street
Dr Adolph Kleinwachter, 2309 North Ridgeway Avenue

Dr. Pelton Appointed Superintendent of St. Luke's.—Dr. Charles H Pelton, superintendent of the Elyria Memorial Hospital, Elyria, Ohio, has been appointed superintendent of St Luke's Hospital, Chicago, and will take up his new duties about July 1 Dr Pelton has been superintendent of the Elyria Memorial Hospital for about four years, and previous to that appointment he was assistant to the late Dr. Arthur B Ancker, in whose honor the city and county hospital at St. Paul was named the Ancker Memorial Hospital.

Nurses' Training School for University of Chicago.—The Illinois Training School for Nurses, which, for about forty-five years, has served the Cook County Hospital, will be transferred to the University of Chicago. When the Cook County commissioners have completed other arrangements *for the nursing of patients in Cook County Hospital, the* property and resources of the Illinois training school, involving about $500,000, will be turned over to the university, making possible a school for nurses in connection with the university medical program on the South Side. Not less than $1,000,000 will be required to endow the undertaking, and this fund must come from benefactors who see the significance of the project. The board of directors of the Illinois Training School for Nurses comprise, among many others, Mrs Harry F. Williams, president; Mrs. Charles T. Mordock, corresponding secretary; Miss Augusta Fenger, Mrs. Bertram Sippy and Mrs. Charles H. Wacker.

Sale of Poisonous Shoe Dyes Prohibited.—The department of health of Chicago has issued an order prohibiting the sale or use in the city of leather dyes containing toxic solvents on and after March 1, 1927, and requiring that all shoe dyes *offered for sale or used from June 1, 1926, to March 1, 1927,* shall have a "caution label" as follows: "Shoes that have been dyed must be permitted to stand in the open (not wrapped up) for not less than seventy-two hours after dyeing, before being worn, in order to avoid poisonous effects to the wearer This dye must not be used on canvas, satin or other shoes manufactured from fabrics. Under no circumstances should shoes or edges of the soles of shoes be dyed while on the feet." A notice will be posted in every shoe shop, shoe-shining parlor, and any place where shoes are dyed, and any person failing to comply with the foregoing order will be prosecuted under section 2916 of the municipal code, or the dye materials destroyed, or both. This section is taken as a public health measure, and the health commissioner requests the cooperation of all concerned.

MAINE

State Medical Election.—At the annual meeting of the Maine Medical Association, Poland Springs, June 10-12, Dr Lester P Gerrish, Lisbon Falls, was elected president; Dr Nathaniel M. Marshall, Portland, president-elect; Drs. Thomas S Dickison, Houlton, and Ward J. Renwick, Auburn, vice presidents, and Dr. Bertram L. Bryant, 265 Hammond Street, Bangor, secretary-treasurer.

MASSACHUSETTS

State Medical Election.—Dr. James S. Stone, Boston, was elected president of the Massachusetts Medical Society at the annual meeting, June 8; Dr. John M. Birnie, Springfield, vice president, Dr Walter L Burrage, Brookline, secretary; Dr. Arthur K Stone, Framingham Center, treasurer, and Dr. William H Rose, Worcester, orator. The total registration at this meeting was 706, and in addition there were 185 women present. The next meeting will be in Boston, June 9-19, 1927

Gift to Hospitals.—Eight hospitals and the Boston Museum of Fine Arts will eventually share equally in the residue of the estate of the late Wilmot R. Evans of Newbury, estimated for the purposes of bond at more than $3,500,000. The hospitals are Massachusetts General Hospital; Boston Lying-In Hospital; Boston Home for Incurables; Anna Jacques Hospital, Newburyport; Everett Cottage Hospital; Everett Home for Aged Persons; Cambridge Hospital, Cambridge, and Children's Hospital of Boston.

State Tuberculosis Program.—To assist in the program of the state department of health to prevent the development of pulmonary tuberculosis in adult life, the Boston Department of Health began in 1925 the physical examination of school children below the grade of high school. Thus far there have been selected for the purposes of the program more than 78,000 children, the selection being based on an apparent deficiency in weight and height. Of this number who have been made subject to special attention, 8,874 have been selected for special physical examination, and of these 6,561 had undergone this examination at the time of this report. On the evidence presented by roentgenograms, 541 children were said to have hilum tuberculosis, either active or latent, or to be suspicious. The entire procedure, thus far in Boston has disclosed only four cases of active pulmonary tuberculosis.

MINNESOTA

Committee to Confer with University Representatives.—In accordance with a resolution adopted by the house of delegates of the Minnesota State Medical Association, a committee has been appointed to confer with the president of the University of Minnesota and other representatives to consider what the policy of the university shall be concerning problems affecting the medical school. The resolution passed was, in part, as follows:

> *Resolved,* That the Minnesota State Medical Association disapproves of the general policy of admitting pay patients to the University Hospital; be it further
>
> *Resolved,* That a committee of seven, including the president of the association, Dr. Herman M. Johnson, who shall be an active member of this committee, be appointed by the president of the association, and after having fully informed themselves concerning the problems affecting the medical school, arrange a conference between this committee of the association, the president of the University of Minnesota and representatives of the board of regents of the university to consider what the future policy of the university shall be concerning these problems and other problems which may present themselves concerning the medical school and the medical profession; be it further
>
> *Resolved,* That the Minnesota State Medical Association reasserts its stand previously taken against the socialization of medicine and state medicine; be it further
>
> *Resolved,* That the members of the Minnesota State Medical Association do hereby express their willingness to cooperate with the board of regents of the State University of Minnesota and others in authority to the end that an abundance of suitable clinical material, secured entirely from the ranks of the worthy poor, may be available for medical instruction, and pledge their support in securing public and private funds for this purpose.

MONTANA

Personal.—Dr. Thomas H. Handbidge, Circle, has tendered his resignation as health officer of McCone County.——Dr. Hiram B. Cloud, Medicine Lake, has been appointed health officer of Sheridan County.——Lieut. Col. James T. Arwine, Helena, medical reserve, was ordered to active duty for training at American Lake, Wash., effective, June 13; similar orders were issued by the War Department for Lieut. Earl C. Hall, Ashton.

NEW JERSEY

State Medical Election.—At the annual meeting of the Medical Society of New Jersey, June 17-19, at Atlantic City, Dr. James S. Green, Elizabeth, was elected president; Drs. Walt P. Conaway, Atlantic City, Ephraim R. Mulford, Burlington, and Andrew F. McBride, Paterson, vice presidents; Dr. John B. Morrison, Newark, recording secretary; Dr. William J. Carrington, Atlantic City, corresponding secretary, and Dr. Elias J. Marsh, Paterson, treasurer. The society adopted resolutions authorizing the establishment of permanent headquarters, and a committee was appointed to perfect the plans; Dr. James Hunter, Jr., Westville, is chairman of the committee.

Society News.—Dr. Hannah M. Stone, clinical director, American Birth Control League, addressed the Asbury Park Medical Society, recently, on "The Technic of Contraception." ——Dr. Joseph F. Montague, New York, addressed the Passaic County Medical Society, Paterson, recently, on "Popular Fallacies Concerning Hemorrhoids," illustrated by motion pictures. The society gave a dinner, June 8, in honor of its oldest member, Dr. James M. Stewart, Paterson, at the North Jersey Country Club.——Dr. Henry H. Brinkerhoff retired in May after thirty-two years of service as treasurer of the Hudson County Medical Society, Jersey City; Dr. Brinkerhoff received a standing vote of thanks from the society, was made an active member without payment of dues, and will be the guest of honor at the next annual dinner.——Dr. William S. Bainbridge, New York, recently addressed the quarterly meeting of the Middlesex County Medical Society on "The Present Status of the Cancer Problem."

NEW MEXICO

Rocky Mountain Diarrhea.—The U. S. Public Health Service has assigned, according to the Bureau of Public Health of New Mexico, Surg. J. G. Wilson to make a thorough study of the annual outbreak in the Rocky Mountain region of an acute diarrheal condition that numbers its victims by hundreds. Limitation of funds, it is said, will prevent Dr. Wilson from visiting localities that have a small number of cases. Health officers are requested to keep in touch with physicians and their counties, and when an outbreak is developing to wire the state department of health, which will notify Dr. Wilson. Detailed records should be kept of such cases to assist in the investigation.

NEW YORK

Personal.—Charles W. Dodge, after thirty-one years of service, has retired, at his own request, as bacteriologist in the bureau of health of Rochester.——A testimonial dinner in honor of Dr. Henry L. K. Shaw, chairman, committee on legislation, was given at the University Club, June 15, by the Council of the Medical Society of the State of New York, for his leadership in behalf of the Webb-Loomis bill, amending the medical practice act.

Vaccination Stops Quarantine.—Twelve cases of smallpox reported at Cold Spring caused a quarantine to be established at Camp Smith, where about 1,200 national guard troops are in camp for training, including the One Hundred and Second Medical Regiment, comprising units from New York, Albany, Rochester and Ticonderoga, and the One Hundred and Second Engineers, from New York. The entire personnel of the camp was vaccinated, June 19, following which the quarantine restrictions were removed.

History of Medical Society.—The Seneca County Medical Society is collecting biographic records of all physicians who ever practiced medicine in the county and also records of the county society; these will be compiled in a history of the society by Drs. Lester W. Bellows, Waterloo, and Albert J. Frantz, Seneca Falls. Some biographies already obtained go back as far as 1792, and all of the society records are intact as far back as 1865. The Seneca County Medical Society is 116 years old. Ethical physicians who have not given the data desired are requested to write promptly to Dr. Bellows, as the history is expected to be placed before the society for approval this fall.

New York City

Personal.—Dr. James F. Cooper, of the American Birth Control League, is reported as having made another tour in April and May, addressing state and county medical societies and other organizations in Colorado, New Mexico, Arizona and Florida.——Dr. Smith E. Jelliffe has been made a corresponding member of the Vienna Society of Psychiatry and Neurology.——Dr. Howard Fox has been appointed chairman of the newly organized section on dermatology and syphilology of the Medical Society of the State of New York.——Dr. Morris Levine has been promoted to associate professor of otology, New York Post-Graduate Medical School and Hospital.——The faculty and management of Long Island College Hospital were hosts, June 5, at the Hamilton Club, to Drs. William Browning and Henry H. Morton, professors at that school for forty-four and thirty-one years, respectively. ——Dr. Alexis Carrel and Pierre Lecomte du Noüy, D.Sc., of the Rockefeller Institute for Medical Research, sailed for France, June 5.——Drs. and Mesdames Louis L. Seaman, Fred H. Albee and Richard Kovacs entertained members of the Travel Study Club of American Physicians at dinner at the Army and Navy Club, June 11, previous to their sailing the next day on a visit to medical centers in Europe.——Dr. William H. Park received the honorary degree of doctor of science from New York University at the commencement, June 9.——T. B. Kidner has resigned as institutional secretary of the National Tuberculosis Association and has been succeeded by Mr. Jamieson Marshall.——Henry J. Fisher, president of the United Hospital Fund of New York, recently went to England to study the administration of King Edward's Hospital Fund for London, which, it is said, promotes coordination among 118 London hospitals, and makes an annual campaign for funds toward their support.——Dr. Otto Glogau is president of an organization of Americans of German and Austrian descent, which collects funds for Germanic art reproductions in America; a delegation recently went to Harvard University to unveil, at the Germanic Museum of the university, three replicas of masterpieces of medieval sculpture, and gave to the museum a check for the purchase of an additional gift.——Dr. Lawson G. Lowrey, now engaged in child guidance work in Cleveland, has been appointed director of the Institute for Child Guidance, which has just been established in this city to carry out a comprehensive program of community mental hygiene.——Dr. Francis C. Wood sailed for Liverpool, June 19, to complete his studies with Prof. W. Blair Bell of the results of treatment of cancer with colloidal lead.

OREGON

Naturopath Indicted.—J. C. Ritter, a naturopath of Portland, was indicted, it is reported, by the March grand jury on a charge of manslaughter, based on a death alleged to have been due to an illegal operation; Ritter is out under $5,000 bail.

Hospital News.—The Lutheran Church of the Columbia Conference has taken over the hospital property in Astoria at Sixteenth and Franklin streets, where a fraternal hospital association started to build.——The Salem Hospital will build a new thirty-bed wing, costing $60,000.

Personal.—Arthur R. Moore, Ph.D., professor of physiology and biochemistry, Rutgers University, Brunswick, N. J., has accepted the position of professor of zoology at the University of Oregon.——Dr. David E. Wiley, Hillsboro, resigned as county health officer, June 1.——Lieut. Col. William C. Smith, medical reserve, was ordered to active duty for training at American Lake, Wash., effective, June 13.

SOUTH CAROLINA

Graduation at Medical School.—At the recent graduating exercises of the Medical College of South Carolina, Charleston, the following changes in the faculty were announced: Dr. William P. Rhett has been appointed assistant in surgery; Drs. George H. Zerbst and Roderick Macdonald, assistants in ophthalmology and otolaryngology; Dr. Sedgwick Simons, instructor in clinical pathology to succeed Dr. Hugh E. Wyman, resigned, and Dr. Thomas H. Martin, appointed lecturer in surgery. The Manning Simons scholarships, established in memory of the late Dr. Manning Simons, who for years was professor of surgery, were awarded to James O'Hear, Jr., of the sophomore class, and Gerald E. McDaniel of the junior class. The degree of doctor of public health was conferred on Dr. James A. Hayne of Columbia. There were thirty-eight graduates in medicine.

WASHINGTON

Hospital News.—Dr. Lawrence H. Meadows has moved to Port Gamble to assume charge of the McCormick Lumber Company hospitals.

Annual Postgraduate Lectures.—The tenth postgraduate course of medical lectures given under the auspices of the University of Washington will be delivered, July 19-23, in Anderson Hall; Dr. George Dock, Pasadena, will give the medical lectures; Dr. William F. Braasch, Mayo Clinic, Rochester, Minn., the urologic lectures, and Dr. F. W. Rankin, of the Mayo Clinic, the surgical lectures; each speaker will lecture daily for five days. In addition, a public health lecture under the auspices of the university will be delivered Wednesday; there will be a banquet Monday evening, and alumni reunions Tuesday evening.

State Medical Meeting.—The annual meeting of the Washington State Medical Association will be at Spokane, June 28-30; the county health officers of the state will also hold their annual meeting at this time. Dr. Hans Lisser, associate professor of medicine, University of California Medical School, will give a lantern slide demonstration on "Pituitary Syndromes," June 29; Dr. Maurice F. Dwyer, Seattle, will discuss "Gastric Lesions," and Dr. John C. Lyman, Walla Walla, "Improvement of Our Poor Surgical Results." The public health league will hold its luncheon and general meeting at noon, Tuesday; there will be a dinner dance in the evening at the Davenport Hotel. Dr. Howard Lilienthal, professor of clinical surgery, Cornell University Medical College, New York, will speak on "Empyema," and Dr. Charles D. Hunter, Tacoma, on "Etiology and Treatment of Nonunion of Fractures," and Dr. Clarence A. Smith, Seattle, on "Application of Physiotherapy." There will be a smoker, Wednesday evening, in addition to other entertainment which will insure an enjoyable visit to Spokane.

LATIN AMERICA

New Chief of Public Health Service.—Dr. Francisco María Fernández, Havana, has just been appointed chief of the public health service in Cuba; he is president of the local medical society and of the Círculo Médico de Cuba, and is director of the *Crónica Médico-Quirúrgica* of Havana. Cuba is one of the few countries in which the chief of the public health service is a member of the cabinet.

First Pan-American Congress on Tuberculosis.—The city of Córdoba, Argentina, is preparing for an important conference on tuberculosis in its medical, social, economic and biologic aspects. It will convene, Oct. 10, 1927. Dr. Juan F. Cafferata, Córdoba, is president of the committee of organization, which includes the national and regional authorities. He urges the formation of subcommittees in cities throughout the Americas. The altitude and climatic conditions of Córdoba have made it a center for tuberculosis sanatoriums.

GENERAL

Discharge of Oil in Navigable Waters.—The American and British delegates to the Conference on Oil Pollution, held in Washington, D. C., to obtain an agreement for total prohibition of the discharge of oil from vessels on the high seas, reached a tentative agreement, June 12, on a system of zoning, under which vessels will be forbidden to discharge oil in navigable waters within a fixed distance from the shore. This resolution was reported to the conference after several sessions, during which there were discussions of various methods proposed for checking pollution of navigable waters by oil-burning and oil-carrying vessels. As tentatively agreed, the zoning resolution provides that the distance off shore shall not be less than 50 miles nor more than 150 miles, and that no zone may be established by a nation without the consent of neighbor nations. Members of the conference feel that one of the most important problems of the conference will be disposed of when the zoning plan is agreed on. The next problem is that of working out plans for enforcement.

Bequests and Donations.—The following bequests and donations have been announced recently:

The Albany Medical College, Albany, N. Y., $25,000; the Albany Associated Charities, $5,000, and the Albany Public Health Nursing Association, $5,000, by the will of Emily Niles Huyck.

The Home for Aged of the Little Sisters of the Poor, New York, $500, *and the New York Foundling Asylum, $500, by the will of Jane Nulty.*

The Eagleville Sanatorium for Consumptives, Eagleville, Pa., $25,000, and the Federation of Jewish Charities, Philadelphia, $5,000, by the will of Caroline Seidenbach.

The Illinois Children's Home and Aid Society, Duquoin, Ill., $50,000, by the will of the late Dr. Dwight J. Harris, Chicago.

The College of Physicians of Philadelphia, $5,000, by the will of the late Dr. S. Lewis Ziegler. Dr. Ziegler also bequeathed his library to the College of Physicians with the stipulation that it shall go to his son should he decide to become an ophthalmologist.

The New York Skin and Cancer Hospital; the St. Christopher Hospital for Babies; the Brooklyn and Jewish hospitals and the Graham Home for Old Ladies, each $5,000, by the will of William D. Hoxie.

The New York Skin and Cancer Hospital, $1,566, by the will of Edward Gordon.

The New York Post-Graduate Hospital; the Babies Hospital; People's Hospital and St. Christopher's Home for Children, Dobbs Ferry, N. Y., all of New York, each $101,000, by the will of Mrs. Anna Dodge McCullough.

Mount Sinai Hospital, $1,000; the Hebrew Orphan Asylum; the Home for Aged and Infirm and the Montefiore Home, all of New York, each $500, by the will of Caroline Adler.

White Plains Hospital, White Plains, N. Y., $10,000, by the will of Cornelius P. Young.

The Convalescent Home, Andalusia, Pa.; Eagleville Sanatorium, Eagleville, Pa., and the Jewish Hospital, Philadelphia, each $10,000, by the will of Fanny Rice.

The Mount Sinai Hospital, Philadelphia; the Uptown Hebrew Day Nursery and Downtown Day Nursery, each $500, by the will of the late Abram Waxman.

The Evangelical Deaconess Hospital, Brooklyn, N. Y., $5,000, by the will of Anna Heintz.

Brown University, Providence, R. I., and the United Hebrew Charities, New York, each $10,000, by the will of the late Oscar S. Straus, New York.

Mr. and Mrs. Booth Tarkington have donated $5,000 in memory of their daughter, and Mr. Carl Fisher $10,000 to the James Whitcomb Riley Hospital for Children, Indianapolis.

The Stamford Hospital, Stamford, Conn., has been given between $150,000 and $200,000, anonymously, to build a nurses' home.

The Hebrew Orphan Asylum, New York, $2,500; the Mineola Home for Cardiac Children, and the Permanent Blind Relief for Soldiers, each $1,000, by the will of Isaac Brill, New York.

The Manhattan Eye, Ear, Nose and Throat Hospital, New York, and the Hartford Hospital, Hartford, Conn., each $25,000, by the will of Mrs. Alice D. Jackson, New York.

The Home for the Aged, Brooklyn, $1,000, by the will of Mary F. B. Spalding.

The Niles Hospital Association, Niles, Mich., $5,000, by the will of Mrs. Sally Lipp.

The Federation of Jewish Charities, $500, by the will of the late Morris Strousse.

The Lutheran Hospital Association, New York, Lennox Hill Hospital, the Bethlehem Orphan and Half Orphan Asylum, each $1,000, by the will of Anna A. Kimme.

Mount Sinai Hospital, Lennox Hill Hospital and the Hebrew Orphan Asylum, all of New York, each $500, by the will of Jacob Manheimer.

The Good Samaritan Hospital, Lexington, Ky., recently received a gift of $55,000, through H. L. Ott, Crestwood, a member of the board of directors.

FOREIGN

Spain Founds a Council on Pharmacy and Chemistry.—Our Spanish exchanges bring the text of the royal decree organizing the Instituto Técnico de Comprobación for examining vaccines, serums, biologic preparations, proprietary medicines and disinfectants and foods for infants, to determine the truth or falsity of the claims of the manufacturers. The director is to be appointed by the government, but the other positions are to be filled by competitive examination. The institute is to be equipped from the funds obtained by the registering fee already imposed, and a stamp tax on proprietaries. The chief of the public health service, the dean of the faculty of pharmacy and the director of the provincial laboratory at Madrid have been appointed the committee of organization.

Deaths

John Howland ⊕ professor of pediatrics in Johns Hopkins University Medical Department, and pediatrician-in-chief of Johns Hopkins Hospital since 1912, died in London, June 20, following a surgical operation. He was born in New York, Feb. 30, 1873, the son of Judge Henry E. Howland and Louise Miller Howland. After receiving his early education in the public schools of New York, he attended the Phillips Exeter Academy. He received the degree of Bachelor of Arts from Yale University in 1894, and the degree of M.D. from the Medical College of New York University in 1897. Dr. Howland then served as house officer in the Presbyterian Hospital of New York from 1897 to 1899, and in the New York Foundling Hospital from 1899 to 1900. He studied abroad in Berlin and Vienna, and on his return to this country became pathologist and attending pediatrician to the Foundling Hospital. At various times Dr. Howland served on the staffs of the Willard Parker Hospital, the Riverside Hospital and St. Vincent's Hospital in New York City, and as instructor and associate in pediatrics in the Columbia University College of Physicians and Surgeons. In 1911, he was selected for the chair of pediatrics in the Washington University School of Medicine of St. Louis. Before undertaking this work, he spent a year in the children's clinics in Germany. In 1912, Dr. Howland received the offer of the position in the Johns Hopkins faculty, which he held at the time of his death.

Dr. Howland was associated with Dr. L. Emmett Holt of New York for twelve years, assisting him in the publication of the well known textbook, and, following Holt's death, acting as its editor. He had also been one of the editors of the *American Journal of Diseases of Children* since its foundation. In 1909, while acting as instructor in diseases of children in the College of Physicians and Surgeons of Columbia University, Dr. Howland was made a member of the Council on Pharmacy and Chemistry of the American Medical Association. Throughout his service on the Council, Dr. Howland was active, progressive and always without fear of consequences when plain speaking was in the interest of the advance of medical science. As a member of the Council's Committee on Therapeutics, and in accordance with the work to which he devoted his life, he was chiefly concerned in advising the Council in regard to the acceptance of medicines and medical foods used in the treatment of children. In addition, Dr. Howland took an active interest in establishing the value of biologic products. He was one of the Council's committee which prepared the series of articles, "Bacterial Vaccine Therapy," which appeared in The Journal in 1913, and which first definitely criticized the haphazard use of biologic products, particularly the "mixed" vaccines, which were gaining much vogue at that time and were threatening the scientific status of biologic therapy.

John Howland, M.D., 1873-1926

Dr. Howland has been recognized as a pioneer in American work on the fundamental requirements of infant nutrition. His research included studies on the metabolism of children, and important investigations on acidosis and on the calcium content of the blood in rickets and in tetany. He was recognized everywhere as a progressive and unselfish leader in the practice of pediatrics.

Carlos F. MacDonald ⊕ New York; Bellevue Hospital Medical College, New York, 1869; professor of mental diseases at his alma mater, 1888-1897, professor of mental diseases and medical jurisprudence, University and Bellevue Hospital Medical College, 1897-1906, and since 1906 emeritus professor; lecturer on insanity, Albany Medical College, 1892-1894; medical superintendent, Kings County Lunatic Asylum, 1873-1875; manager and consulting physician, New York State Inebriate Asylum, 1877-1879; medical superintendent of the Binghamton Asylum for Insane, 1879-1880, and of the State Asylum for the Insane since 1881; on the staffs of the Manhattan State Hospital and the Hackensack City (N. J.) Hospital; president of the New York State Commission in Lunacy, 1889-1896; member of the New York Psychiatrical Society and the American Psychiatric Association (president, 1913-1914); Civil War veteran; aged 80; died, May 29, at his home in Central Valley.

Russell Daniel Carman ⊕ for many years a leading roentgenologist, died of cancer of the stomach at Rochester, Minn., June 18, after a long illness. He was born in Iroquois, Ont., March 17, 1875. The degree of M.D. was conferred on him by the Marion-Sims College of Medicine, St. Louis, in 1901. After graduate study at the Johns Hopkins Medical School and Harvard, he took up the practice of medicine in St. Louis, specializing in roentgenology He was assistant in surgery on the faculty of his alma mater from 1902 to 1907, assistant in roentgenology from 1907 to 1909, and assistant professor of roentgenology from 1909 to 1910. He became lecturer in roentgenology in the Washington University in 1910, holding this position until 1913, at which time he went to the Mayo Clinic as head of its section on roentgenology, holding that position until his death. He was also professor of roentgenology in the Graduate School of the University of Minnesota.

The scientific contributions of Dr. Carman were recognized by his election to the presidency of the American College of Roentgenology and of the Radiological Society of North America. He was also a member of the International Congress on Radiology and of similar special organizations in several foreign countries. In addition to a book entitled "The Roentgen Diagnosis of Diseases of the Alimentary Canal," Dr. Carman contributed numerous observations to the literature on this subject, especially dealing with diagnosis of lesions of the gastro-intestinal tract. As a pioneer in the establishment of this specialty, he was generally recognized as a conservative and sincere leader.

Herbert T. Thornburgh, Cincinnati; Cleveland College of Physicians and Surgeons, Medical Department Ohio Wesleyan University, Cleveland, 1898, member of the American Psychiatric Association; on the staff of the Longview Hospital, Cincinnati, and formerly on the staff of the Eastern State Hospital, Lexington, Ky.; aged 54; died, May 23, of injuries received in a fall while attempting to adjust an awning.

Charles Bates Dunlap, New York; Medical School of Harvard University, Boston, 1894; member of the New York Neurological Society, and the American Psychiatric Society; professor and formerly lecturer of neuropathology at the University and Bellevue Hospital Medical College; chief associate in neuropathology, New York State Psychiatric Institute; aged 62; died, June 6, at his home in Scarsdale.

Arthur J. Hill ⊕ Canton, Ohio; Western Reserve University School of Medicine, Cleveland, 1893; member of the American Academy of Ophthalmology and Oto-Laryngology; on the staff of the Mercy Hospital; aged 54; died, May 12, of pernicious anemia.

Paul Bromley Godsman, Burlington, Colo.; Medical College of Ohio, Cincinnati, 1884; also a lawyer; formerly county judge, and member of the state legislature; aged 66; died, May 2, at Cheyenne Wells, of skull fracture received in a fall.

Oliver Groves ⊕ Rochester, N. Y.; Victoria University Medical Department, Toronto, 1887; formerly on the staff of the Royal Alexandria Hospital, Fergus, Ont ; aged 64, died, April 30, at Port Hope, Ont, of heart disease

Alvin Beckman, Bartlett, Texas, Medical Department of the Tulane University of Louisiana New Orleans, 1895; member of the State Medical Association of Texas, aged 55, was killed, March 28, when struck by a train

John Nelson Slown, Spencer, Ind (licensed, Indiana, 1897); member of the Indiana State Medical Association, aged 72, was killed, June 1, when the automobile in which he was driving was struck by a train

Banks Albert Shepherd, Lexington, Miss , Vanderbilt University Medical Department, Nashville, 1877, member of the Mississippi State Medical Association, aged 71, died, March 24, of lobar pneumonia

Robert Sanford Mitchell ⊕ Appleton, Wis , Northwestern University Medical School Chicago, 1904, member of the Radiological Society of North America, aged 48, died, May 17, of angina pectoris

William P. Kanar, Solvay, N Y , College of Physicians and Surgeons Baltimore, 1893 member of the Medical Society of the State of New York, aged 60 died, May 10, following a long illness

Percy Cobun Showalter, Clarksburg W Va Baltimore Medical College, 1910 member of the West Virginia State Medical Association aged 38 died May 2, of chronic nephritis

John W Haden, Plevna, Mo Missouri Medical College, St Louis, 1895, member of the Missouri State Medical Association, aged 55, died, May 10 of pneumonia and heart disease

John Benjamin Thomas, Wellington Ohio University of Wooster Medical Department Cleveland 1880 aged 69, died recently, of injuries received when struck by an automobile

Thomas S Greer ⊕ Edgerton Kan University Medical College of Kansas City, 1897 aged 64 died April 2 at the Christian Hospital, Kansas City Mo of duodenal ulcer

Frederick De Haven, Louisville Ky , Southwestern Homeopathic Medical College and Hospital Louisville, 1900, aged 61, died, May 2, of cerebral hemorrhage

David F Eakin, Spokane Wash , Cincinnati College of Medicine and Surgery, 1858 aged 85 died April 16 at La Grande, Ore , of cerebral hemorrhage

J T Slover, Sulphur, Okla Dallas Medical College, 1904 member of the Oklahoma State Medical Association, died, March 1, of carcinoma of the liver

William H Groves, Dixie, Ont Canada Victoria University Medical Department, Toronto 1889 aged 61, died, April 27, of cerebral hemorrhage

Charles T. Burnett, Newport Tenn , University of Louisville School of Medicine, 1892, aged 71, died, March 23, at Cartersville, Ga , of pneumonia

John Henry Sullivan, Mount Clemens, Mich Baltimore Medical College, 1898, aged 61, died, February 28, of arthritis and carcinoma of the stomach

Ephriam Ellsworth Gray, Bicknell, Ind Marion-Sims College of Medicine, St Louis, 1892, aged 65, died, February 19, of carcinoma of the liver

Frederick Rorbach, Johnsonburg, N J , Bellevue Hospital Medical College, New York, 1867, aged 80, died, April 26, of senility

Edward B Fetherston, Chicago, College of Physicians and Surgeons, Chicago, 1893, aged 64, died recently, of heart disease

John M Cullen, Chicago College of Physicians and Surgeons, Chicago, 1897, died, May 27, of chronic nephritis

J. W. Davis, Rineyville, Ky , Louisville Medical College, 1889, aged 87, died, April 2, of pneumonia

Marriages

Franklin August Weigand to Miss Marie Louise Haussmann, both of Philadelphia, May 26

Harold C Harpfer to Miss Esther Florence Evans, both of Wheeling, W Va, June 10

Moses Paulson, Baltimore, to Miss Helen Golden of Elkins, W Va, June 10

Lawson Wilkins to Miss Lucille Mahool, both of Baltimore, June 9

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 12, 1926

Fatal Hot Bath

An inquest was held at the Marylebone coroner's court on a woman, aged 46, who was found dead in a bath She was in the habit of taking very hot baths, and several years ago she fainted in one but recovered just in time to get out Dr R M Bronte, government pathologist, who made a necropsy, stated that there was marked anemia of the brain The condition of the lungs was not such as one would have expected in a case of drowning, and showed that on going under the water she was not breathing The heart was small only 7¼ ounces (200 Gm) instead of the normal 10¼ ounces (285 Gm) but was quite healthy. He attributed death to coma due to cerebral anemia The anemic condition of the brain might have been due either to the taking of a heavy meal before the bath or to the heat of the water The coroner asked It is a dangerous thing to boil yourself like that is it not?" Dr Bronte replied "Yes, particularly after meals The hot bath had the effect of drawing the blood away from the brain " Dr N S Gilchrist said that he attended the deceased regularly and saw her last on the day before death for the unsatisfactory state of her health since an operation for appendicitis last November She seemed to have no energy He arrived at the house Sunday morning about 9 o clock just before the police, and he found the bathroom door locked With the assistance of the police he helped to burst open the door In the bathroom they found her lying in the bath, with the water sufficiently high to cover her nose and mouth completely The electric light was still burning, and the water was not quite cold He formed the opinion that she had entered the bath about 10 or 11 o clock the night before and had been dead from eight to ten hours The coroner said that this was a case in which the cause of death was purely natural He could not exclude from his verdict, however, the fact that death was brought on by the hot bath The verdict, therefore, would be accidental death"

Barbituric Derivatives Declared Dangerous Drugs

A conference of representatives of the home office, the ministry of health the pharmacists and the British Medical Association has been held to discuss the measures necessary to obviate the dangers to the public from the unrestricted sale of barbital (veronal) and other derivatives of barbituric acid The home office experts produced evidence of many fatalities particularly from barbital, sometimes suicidal, but more frequently from an accidental overdose for sleeplessness London experience showed that in this respect barbital was the most dangerous drug in the pharmacopeia The representatives of the British Medical Association agreed that it was desirable to prohibit the retail sale of these drugs to unauthorized persons except on a medical prescription, but the pharmacists' representatives were opposed to this unless physicians were at the same time forbidden to supply the drugs, even to their own patients, and were required to order them by prescription, except in emergency or in districts where no pharmacies existed To this the British Medical Association representatives took exception as an interference, on a side issue, with the right of dispensing physicians, especially as there was no evidence of any untoward effects arising from the use of the drugs supplied in this way. The home secretary has taken steps to make regulations under the Dangerous Drugs Act to include among the drugs specified "diethylbarbituric acid and other alkyl, aryl or metallic derivatives of barbituric acid, whether described as veronal, proponal, medinal, dial, or by any other trade name, mark, or designation, and any preparation, admixture or other substance containing any of them." The effect will be to make it unlawful to supply by retail any of these drugs except (1) to a physician (2) for use in hospitals or similar institutions, (3) to persons authorized by the secretary of state, (4) in accordance with a prescription given by a physician. Prescriptions for the drugs must be dated and signed by the physician and bear his address, and they must specify the name and address of the patient and the total amount of the drug to be supplied. Where physicians dispense their own medicines and make an entry in their day book with particulars of the drug and the name and address of the patient and the date of supply, no further record is required. The drugs may not be supplied more than once on the same prescription; provided that, if the prescription so directs, the drugs may be supplied on more than one but not exceeding three occasions, as directed in the prescription, at intervals to be specified.

Injury from a Hair Dye

Another case in which injury from a hair dye was the subject of legal action has occurred. A woman used the preparation known as "Inecto" (of which the composition was not declared but of which the active ingredient appears to be a paraphenylendiamine or similar substance). The dye caused sores on the head, a spreading rash, swelling, affection of the heart and nerves, and permanent disfiguration. It was admitted by the proprietors that the hair dye had untoward effects in persons whose skin was especially susceptible. It was argued, however, that the dye was accompanied by instructions which stated that a test was necessary before using it; that the plaintiff, though she had read the instructions, ignored the test, and that therefore she was negligent in applying the dye and was alone responsible. The jury awarded her $2,500 plus a further sum agreed on as special damage.

Foot-and-Mouth Disease in Animals in Great Britain Introduced from the Continent

Outbreaks of foot-and-mouth disease in domestic animals have been giving much trouble in recent years. Last month the number of outbreaks was eighteen; in April, ten, and in March, nineteen. In the last ten days Scotland, which had previously been free, became the center of an outbreak, and in connection with this the important discovery was made that it originated in foreign pigs brought for curing to British bacon factories. There have been seven outbreaks in the vicinity of a bacon factory at Carluke, and they were all traced to virulently infected carcasses brought in from Holland and Belgium through Rotterdam. The virus is supposed to have been conveyed by human agency or by sewage. There has been another case of foreign infection through Carlisle, and a shipload including infected carcasses has arrived at Leith. It has been long suspected that foot-and-mouth disease might be brought to this country by foreign meat, and especially offal, which is obviously an extremely dangerous source of infection. For the first time there is absolutely definite and complete evidence. The government has therefore prohibited the importation of carcasses from the continent. The only exceptions from this prohibition are: (*a*) fully cured bacon and ham, lard or rendered fat, cooked or preserved meats or meat essences, and (*b*) hides and skins that have been dried, dry-salted or wet-salted. Wet-salted hides or skins must be accompanied by a certificate to the effect that they have been wet-salted for a period of fourteen days.

ITALY

(From Our Regular Correspondent)

May 10, 1926.

International Congress of Surgery

More than 500 surgeons attended the seventh international congress of surgery, which recently convened at Rome.

THE OPENING SESSION

The opening session of the congress was held, April 7, under the chairmanship of Premier Mussolini. After a short address of welcome by the governor of the city, Mussolini reviewed rapidly the history of surgery. It was at the close of the first session that he was wounded in the nose by a shot fired by Miss Gibson. The shot was deflected by Professor Giordano, who seized the hand of the assailant. The bullet, after piercing Mussolini's nose, struck the back of the hand of Professor Alessandri, director of the surgical clinic of Rome, producing a slight contusion.

THE WORK OF THE CONGRESS

The first scientific assembly was held, the afternoon of the same day. The main paper on the first topic, "Radium Treatment of Cancer of the Uterus," was presented by Professor Regaud of Paris. Our statistics, he said, are based on treatment given in 1919 and 1920, since the results must take into account a five-year period of observation. These results show from 15 to 20 per cent of recoveries in all cases without regard to the stage of the disease, or from 40 to 60 per cent recoveries in cases in the primary stage. During the last five years, however, with improved technic, the percentage of recoveries appears to be increasing. Professor Pestalozza of Rome stated that, whenever the tumor can be extirpated, he advised a radical operation, preceded and followed by treatment with radium and roentgen rays. Beuttner is convinced that actinotherapy will continue to increase in importance. Recasens of Madrid explained the therapeutic action of different rays. He emphasized the problem of radium dosage.

The second topic, "The Therapy of Cerebral Tumors," was discussed the afternoon of April 8, the conventionists having spent the morning in clinics and hospitals. Professor Adson of Rochester, Minn., spoke on trigeminal neuralgia, comparing the results of alcohol injections, peripheral nerve excision and radical operation. In addition to his personal statistics on around 300 operations, he referred to several hundred further cases radically treated at the Mayo Clinic. Professor Lozano of Saragossa expressed the conviction that, in spite of the high mortality, extirpation remains the preferred method in the treatment of cerebral tumors. He gave the following statistical figures: an operative mortality of 40 per cent in tumors of the anterior cerebral fossa; 55 per cent in tumors of the posterior fossà; remote cases in which a definite cure resulted amounted to 20 per cent.

The following day (April 9), the third topic was taken up: "Remote Results in the Treatment of Jacksonian Epilepsy." The single paper on the subject was presented by Prof. M. R. Leriche of Strasbourg, who, from his experience with about thirty cases, concluded that jacksonian epilepsy is always associated with a cicatrix caused by a cerebral contusion. According to Leriche, the only true cure consists in excision of the fibroneurogliar cicatrix, which, however, might be influenced by radiotherapy. The speaker emphasized also the rôle of cerebrospinal fluid pressure in the convulsions of jacksonian patients. In the discussion Professor Alessandri of Rome emphasized the need that in operation interventions the normal anatomic planes be reconstructed.

The next congress, to be held in 1929, will convene in Warsaw. Prof. H. Hartmann of Paris was chosen president. A resolution was passed accepting German surgeons as members of the International Surgical Society as soon as

Germany shall have become a member of the League of Nations.

April 10, the last two topics on the program were discussed. The morning was devoted to "Surgery of the Spleen." Papers were presented by Patel of Lyons, N. Leotta of Bari, Papayoannon of Ghesireh, Henschen of St. Gallen, and Cortes Llado of Seville. On the afternoon of this day, the fifth topic was discussed: "Abscesses of the Liver." The first speaker, Prof. M. L. Dominici of Sassari, after dividing the abscesses of the liver into pyogenic and amebic, spoke of the differential diagnosis and of the various forms of treatment. Prof. Paulos Petridis of Alexandria, Egypt, referred to his 538 cases of hepatic abscesses treated in the Greek hospital of Alexandria from 1896 to 1925. He stated that in recent years the number of such morbid types had notably decreased, owing to the use of emetine. In the discussion, Giordano referred to his 140 cases in which puncture of the viscera gave no practical results. Matthiasson of Akureyri referred to the frequency of echinococcus cysts in Iceland.

Statistical Data on Industrial Accidents

During the first eight months of the forty-second year of its existence, the Cassa nazionale di assicurazione has issued 66,864 new industrial accident insurance policies, whereby 824,051 workmen were insured. It has received 123,634 accident claims and has expended 49,039,000 liras in the adjudication of 109,205 cases, 400 of which were death claims and 6,127 were for permanent disability. In the compulsory insurance of agricultural laborers, the *Cassa* has received 34,705 accident claims and has distributed 11,571,000 liras in the adjustment of 26,870 cases, 526 of which were death claims and 2,779 were for permanent disability.

Morbidity and Mortality Among Nurses

Among the regular nursing personnel of the Ospedale maggiore in Milan, during the period 1910-1920, the average annual morbidity was 1.32 per cent among the male nurses and 1.03 per cent among the female nurses, excluding the sisters of charity. The increase in the number of days absence from duty has been considerable and is progressive. A ruling adopted in 1919, to the effect that long absence from work because of tuberculosis would not result in dismissal, has been a major cause of the increase.

Statistics on Psychopaths

According to a census taken in October, 1925, the number of persons confined in institutions for mental disease in all Italy is 59,393, which is 1.5 per thousand of population. This shows an increase of 5,082 patients since the previous census, taken in 1914.

Course in Industrial Hygiene

Under the auspices of the Associazione degli industriali italiani and with the collaboration of the minister of political economy, a course of lectures, to be followed by practical drill, on "Industrial Hygiene and the Prevention of Accidents" will soon be held. This course, which is the first of the kind to be held in Italy, will take up the prevention of industrial accidents, and will be especially for inspectors of industry and labor, though any workmen may take the course.

Coordination of the Antituberculosis Crusade in Latium

According to the plans of the governor of Rome, a general house sanitation campaign will be launched in the city and will be aimed at the homes of the tuberculous in particular; a work colony will be established for tuberculous persons. In addition, there will be coordination of the home visiting service; provision will be made for the children of tuberculous mothers and especially for infants; the public health service will be improved, including the establishment of numerous public baths.

BERLIN

(From Our Regular Correspondent)

May 15, 1926.

Meeting of the German Roentgenologic Society

The meeting of the Deutsche Röntgen-Gesellschaft was held in Berlin, April 11-13, the first main topic being "Is Postoperative Irradiation of Cancer of the Breast Justified?" Jungling of Tübingen suggested that four stages be distinguished: (1) tumor confined to the mammary gland; (2) tumor no longer freely movable toward the skin and the pectoralis muscle; (3) axillary glands all involved, and (4) intraclavicular glands involved. Results of postoperative irradiation therapy, not based on such a classification, have not been easy to evaluate. Statistics on series of cases less than fifty should be disregarded. In the Kiel Clinic, postoperative irradiation of 221 cases has given improved results, whereas in Tübingen, with a series of 447 cases, it has caused no improvement but rather poor results. Rostock and Hamburg report an improvement in cases extending over three years but no improvement (or poor results) in cases extending over five years; prophylactic postoperative irradiation only delayed the recurrences. Heavy doses seem without value for postoperative irradiation. The technic recommended by H. Meyer of Bremen, which consists of fractioned moderate doses, has proved most effective. Ten surgical clinics do and ten do not apply postoperative irradiation. Five clinics use the method only in advanced stages or at the request of the patient. In any event, cancer of the breast should be operated on as radically as possible. Reliance on postoperative irradiation to eliminate remnants of cancer tissue is not well founded. Reported results in stage 1 justify any one in refusing prophylactic postoperative irradiation. Holfelder of Frankfort-on-the-Main pointed out that the effects of after-irradiation were poorer, the heavier the doses administered. That is quite intelligible because, on the one hand, the latent cancer cell (in contradistinction to the fully active cell) cannot be definitely injured by any dose; and, on the other hand, the possibility of an impairment of the defense forces of the organism must be taken into account. A safe norm [illegible] of an erythema dose at intervals of from four to six weeks from eight to ten times in succession. Holfelder does, however, think postoperative irradiation is desirable in especially malignant cancers.

The second topic, "The Roentgenology of the Gallbladder," was treated by O. Strauss of Berlin and Pribram of Berlin. The whole situation has been changed since the Graham method has been introduced. Tetraiodophenolphthalein has proved the best agent, at least as far as intravenous application is concerned. Peroral, duodenal, jejunal and rectal or intravenous applications may be employed. The intravenous infusion has been found superior to all others. The dangers associated with the Graham method have been greatly exaggerated. The deaths so often referred to were the result of an entirely different preparation. The procedure can be regarded as harmless, and there is no objection to ambulant application. It has become routine practice to evacuate the gallbladder by the use of pituitary preparations. Likewise, atropine before the infusion has proved valuable. In intravenous injection, one must be willing to sacrifice time and to infuse slowly, drop by drop, the required agent, dissolved in 40 cc. of distilled water. That requires about fifteen minutes. Pribram announced that he is engaged in the elaboration of a new agent which in its application promises to be simple and which will give good results.

Hanisch of Hamburg, in spite of his success in diagnosis without the Graham procedure, admitted that the Graham procedure is supplanting the older methods more and more.

Schöndube of Frankfort-on-the-Main was able to demonstrate stones in four instances by the Graham method, whereas, with the ordinary method for calculi, their presence had not become known. However, in three other cases the stones could be seen by the ordinary technic, whereas the bladder was not brought into view by the Graham method. Schöndube assumes that a marked secretion of calcium carbonate occurs only when the bladder is closed. Whereas other authors recommend that the roentgenogram be made sixteen hours after the infusion of tetraiodophenolphthalein, Schöndube regards that time as too long. He found that the filling began after the lapse of from three to five hours, and that the optimum was reached in eight hours. To be sure, the observations of the authors and Schöndube's experiences are not comparable without adjustment, since Schöndube does not employ atropine, which paralyzes the motility of the gallbladder and counteracts the effect of the pituitary preparations. In ten cases in which the gallbladders after from five to eight hours were in a good condition to be photographed, Schöndube found no shadows after twelve hours. Five of the patients were pronounced asthenics with cholecystoptosis and presented an unusually marked motility of the gallbladder. Schöndube is an advocate of the intravenous method. He admits, however, that he observed thrombi in 8 per cent of the cases. It is possible that the hemolysis which follows the infusion is the cause of the thrombosis. Rachwalski proposed a new preparation; Gotthart of Munich emphasized the need of caution in patients with exophthalmic goiter. Many were outspoken advocates of the peroral method. The statement that, by means of cholecystography, a correct diagnosis could be reached in from 90 to 100 per cent of the cases was confirmed in the main. The authors held to the view that absence of all roentgen-ray findings occurs in cases of bladder closure.

Holthusen of Hamburg spoke on the "Standardization of Roentgen-Ray Dosage." Glocker of Stuttgart proposed that changes be made in the recommendations of the Deutsche Röntgen-Gesellschaft published in 1913 on the subject of protective measures against roentgen rays. Ernst S. Mayer reported a form of cancer therapy. Fritz reported his observations, made with Posner, to the effect that the glycolysis of tissues, measured by the Warburg method, which requires the exclusion of oxygen, is retarded by the roentgenization of tissue preparations in vitro, whereas irradiation exerted no influence on the respiration of the tissues when that was measurable. The objects examined were the Flexner rat carcinoma, the Jensen rat sarcoma, chicken embryos and the testes of sexually mature rats and mice. At first the investigators did not succeed in confirming in living animals after irradiation of tumors the results obtained after irradiation in vitro. Only when, following the method of Mayer of Vienna, hypertonic glycolysis solution was injected in the animals immediately before the irradiation, did the tumors extirpated immediately after the irradiation, as well as the tumors irradiated in vitro, show any considerable reduction of their glycolysis. Sgalitzer spoke on the roentgen-ray treatment of brain tumors, stating that a glioma, owing to irradiation, had improved to such an extent that the patient could again perform heavy labor. Lorey of Hamburg spoke on bronchography. The ordinary roentgenologic examination had failed in many instances in bronchial diseases, whereas, by filling the bronchi with a contrast medium, excellent results had in most instances been secured. The same thing is true of bronchostenoses and bronchial tumors. The effect of lung collapse in pneumothorax can be studied in excellent fashion by the use of the contrast medium. The method gives also valuable data on the anatomy of the bronchial tree and concerning physiologic questions (peristalsis of the bronchi, etc.).

Correspondence

IODINE IN TUBERCULOSIS

To the Editor:—In discussing "Modern Methods in Diagnosis and Treatment of Pulmonary Tuberculosis" (THE JOURNAL, March 27, p. 973), the reviewer relegates to the commonplace a book that certainly has value, but particularly condemns the use of iodine in the treatment of tuberculosis, at one fell swoop, relegating it to antiquity. I do not believe that any authentic experiments have ever been done to show that iodine breaks down a lung in a tuberculous animal or in man. Except for the report of some guesses on the part of a few men, iodine has not been said to have any harmful effect in this disease. On the other hand, a discussion of the subject by Ragins in the *Bulletin of the Chicago Municipal Tuberculosis Sanitarium* will convince one that iodine may have a place in the treatment of tuberculosis, and that its use certainly has more advocates than antagonists.

E. A. PETERSON, M.D., Denver.

"SENSITIZED BACTERIAL VACCINES"

To the Editor:—In answer to a query regarding sensitized bacterial vaccines (THE JOURNAL, April 24), a statement was made that "sensitized bacterial vaccines are objectionable because they may sensitize the injected person to the proteins in the animal serum with which the bacteria have been treated." Apparently it is assumed that sufficient animal protein must be present in a human dose of the vaccine to cause sensitiveness.

Such vaccines (serobacterins) are sensitized with cattle serum, not horse serum. Also, sensitized bacterial vaccines are not a mixture of serum and vaccine, but the organisms after treatment with the serum are washed with salt solution, recentrifugalized, and finally diluted again in salt solution. The only free serum that could be present is that which clung mechanically to the organisms during the sensitization. The subsequent washing would act as a progressive dilution of this serum, and a calculation of this dilution shows that the greatest amount of serum that could be present in a dose administered to man is 1:1,250,000 cc. This is less than the amount necessary to sensitize a guinea-pig, much less a human being. The only other source of such a suspected sensitization would be the antibodies that are attached to the bacteria. This necessitates the assumption that the antibodies are of a protein nature, and, further, that they are of such a protein nature that would produce sensitiveness. Neither of these suppositions has as yet been proved.

F. M. HUNTOON, M.D., Glenolden, Pa.
Medical Director, H. K. Mulford Company.

TEACHING POSITIONS IN THE PRECLINICAL SCIENCES

To the Editor:—Some years ago the Federation of American Societies for Experimental Biology established a bureau of information, the object of which was to furnish a medium of communication between institutions desiring men to teach in the preclinical sciences and men who are engaged in teaching these sciences, but who desire for some reason or other a change of location. This bureau has been functioning for some years and has been instrumental in placing a considerable number of men in the departments of physiology, biologic chemistry, pharmacology and pathology in the various medical schools in the country.

At present there are available in the files of the director of the bureau the names of a considerable number of men who are anxious to secure positions as teachers in the branches named above. On the other hand, it is rather striking that very few medical schools are making inquiries regarding such men. This may, of course, be because there are no vacancies. On the other hand, it is more likely that the officials in charge of these schools have overlooked the existence of this bureau.

I will be very glad at any time to furnish any information to administrative officers of the schools, or to aid in any way in placing men who have registered with the bureau.

C. W. Edmunds, M.D.,
Director of the Information Bureau.
University of Michigan,
Ann Arbor, Mich.

Queries and Minor Notes

MILK FROM TUBERCULOUS COWS

To the Editor.—I am enclosing a clipping from the *Rural New Yorker* and would be glad to have your opinion respecting the safety of milk from tuberculous cows.

Is it true that human tuberculosis is on the decline? If so, is there, or is there not, a corresponding increase in pneumonia and other respiratory diseases, suggesting that infantile infection with tuberculosis may terminate later in these other forms (through increased susceptibility)?

The statement was recently made in the Cleveland *Plain Dealer* that tuberculosis is now several times more prevalent than formerly among Cleveland school children. In perhaps no other region has there been a more persistent fight by dairymen against the control of bovine tuberculosis than in the region supplying Cleveland with milk. It is true, however, that the population of Cleveland consists very largely of foreigners of the more ignorant classes.

My own observations, during a long life spent on the Ohio farm or in close touch with it, is that bovine tuberculosis is a comparatively new disease in Ohio.

The herd of the Ohio Experiment Station was infected with tuberculosis thirty years ago. We cut out the cancer, at a heavy cost, it is true; but, regarded from the pecuniary standpoint alone, it was a most profitable investment, for by following it with thorough disinfection and the annual use of the tuberculin test, a healthy herd has since been maintained.

Charles E. Thorne, Wooster, Ohio.

Answer.—The mortality from human tuberculosis is definitely on the decline in most countries. In the United States it is less than half of what it was at the opening of the present century. There has not been an increase in pneumonia or other respiratory disease, except during the influenza epidemic, nor is there any evidence that infantile infection with tuberculosis may terminate in these diseases by increasing susceptibility. The mortality for pneumonia (all forms) in the registered area of the United States was 180.5 per hundred thousand in 1900 and 137.3 in 1920. Certain diseases, notably cancer and chronic diseases of the vascular system and kidneys, have increased, partly, without question, because the lowering of mortality from tuberculosis has permitted a larger proportion of the population to live to the age when these diseases are more common.

There is no proof that tuberculosis is more common than formerly among Cleveland school children. The commissioner of health of Cleveland suggests that this impression has become prevalent because of the increased number of reports of tuberculosis resulting from the Cleveland method, recently adopted, of issuing working permits to children of school age only on the basis of physical examination. These examinations have resulted in the recognition of many cases of mild tuberculosis that would otherwise have been undetected. The mortality from tuberculosis in Cleveland for the age period 5-19 years, which includes the school years, has been as follows for the last five years: 1921, 125; 1922, 84; 1923, 98; 1924, 92, and 1925, 86 (figures given by the commissioner of health). In view of the increased population, these figures indicated a decided decrease in the mortality rate.

No competent observer in recent years has seriously questioned the infectiousness of bovine type tubercle bacilli for man. While only a small amount of adult tuberculosis appears to be of bovine origin, about one quarter of the extrapulmonary tuberculosis of childhood, as shown by several extended investigations, is of bovine origin. Several of the statements in the letters printed in the clipping from the *Rural New Yorker* are correct in fact but wrong in implication. It is true that many cattle giving positive tuberculin reactions may live out their natural length of life in apparent health. Nevertheless, such cattle have been infected with tuberculosis. The severity of infection is ordinarily not determined by the tuberculin test. Although only about 25 per cent of reactors have been found on investigation to eliminate tubercle bacilli with the milk, there is no method known at present of ascertaining which reactors are capable, and which are not of contaminating their milk with tubercle bacilli, and therefore all infected cattle are to be considered potential spreaders of tuberculosis.

Statistics that take into account only the mortality from tuberculosis and ignore the disability are apt to be misleading. It is true, as stated in two of the letters printed in the *Rural New Yorker*, that certain studies have failed to show a direct correspondence between human and bovine tuberculosis in certain localities. In addition to the Swedish studies cited, Boquet (*Rev. d. tuberc.*, December, 1921, p. 485) has made a similar report on certain regions in Italy, and Cummins (*Public Health* 35:251, 1922) has noted that the disease tends to be severe in localities in England where the herds are free from tuberculosis. Cummins thinks that some immunity against the human type infection may be conferred by early mild bovine infection, but states that this is no argument against the eradication of bovine tuberculosis, as infection of this type leads in many instances to serious disease. It has been asserted that almost 25 per cent of the fatal tuberculosis of childhood in England can be attributed to bovine tuberculosis, and this does not take into account the nonfatal tuberculosis of bones, joints and lymph nodes leading to some permanent disability.

COMPLICATIONS OF ORCHITIS

To the Editor.—In September and October, 1925, I attended, during a small epidemic of mumps, two cases with complications of orchitis. The orchitis was definite on both sides in one case. In the other case one side was affected, but the other side was doubtful. Both patients were healthy men aged about 20. Jan. 2, 1926, both had swelling of the mammae. The man with the double orchitis had a big swelling of both breasts, not painful, firm and regular of consistency, no redness, no local glandular swelling in the axilla. In March, the swelling was going down slowly. The breasts were then 2½ inches in diameter. Is this swelling of the breast a well known after effect of double orchitis in mumps? I should like to know some more about it. In November, 1925, the semen contained live spermatozoa, but these could have come from the vesicles. There are cases reported of male persons having secreting breasts.

L. J. TeGroen, M.D., Pretoria, British South Africa.

Answer.—The breasts may become swollen and hard, also painful, in much the same way as the testes and the ovaries may be involved in mumps, and this process may develop in males as well as in females. Mastitis has been observed to develop in the course of mumps even in young boys. This involvement of the breasts in mumps seems to be known well enough, but it does not appear to be frequent and it does not seem to have attracted as much attention as other complications.

INDUSTRIAL DERMATITIS

To the Editor.—We use as a back sizing for our axminster rugs a mixture made by dissolving in 120 gallons of water 100 pounds of tapioca flour, 60 pounds of British gum and one half pound of caustic soda, with 1.225 specific gravity. The "British gum" is bought by us and is probably a mixture of various starches and dextrin. Recently, severe cases of rash or eczema have appeared on the hands and arms of five or six of the men who handle the rugs after they have been back sized. Not all of the men so engaged, however, have contracted this rash. We are wondering whether, from previous similar cases that may have come to your attention, you can advise us as to the probable cause of this rash. That is, have you reason to believe that the malady is traceable to possible impurities in the sizing, particularly in the "British gum"? Could such impurities be determined by a chemical analysis? We are writing to you in the belief that you keep a record of cases of industrial diseases and that you may have on record in your files something similar to this case.

Walton C. Forstall, Amsterdam, N. Y.

Answer.—The mixture used for back-sizing the rugs may well be a source of dermatitis. Medical literature seems to show no reference to irritation produced by tapioca flour, but dermatitis developing from wheat flour is generally conceded to occur, and it is entirely probable that the tapioca flour might produce a similar condition. "British gum" is dextrin and may well be the irritating factor, as dermatitis among those handling sugars is not at all uncommon. Skin tests of the susceptible persons may be tried, and in that way the specific irritant might be determined.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

Alabama: Montgomery, July 13-16. Sec., Dr. S. W. Welch, Montgomery.

Arizona: Phoenix, July 6. Sec., Dr. W. O. Sweck, 404 Heard Bldg., Phoenix.

California: San Francisco, July 12-15. Sec., Dr. Charles B. Pinkham, 906 Forum Bldg., Sacramento.

Colorado: Denver, July 6. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: Hartford, Reg. Bd., July 13-14. Sec., Dr. Robert L. Rowley, 79 Elm St., Hartford. Homeo. Bd., New Haven, July 13. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave., New Haven.

Hawaii: Honolulu, July 12-15. Sec. Dr. A. L. Davis, 1254 Emma Street, Honolulu.

Indiana: Indianapolis, July 13-15. Sec., Dr. Wm. T. Gott, 421 State House, Indianapolis.

Maine: Augusta, July 6-7. Sec., Dr. Adam P. Leighton, 192 State St., Portland.

Massachusetts: Boston, July 13-15. Sec., Dr. Frank M. Vaughan, Room 144, State House, Boston.

Missouri: St. Louis, June 28-July 1. Chief, Licensure, Dr. Ross Hopkins, Jefferson City.

New York: Albany, Buffalo, New York and Syracuse, June 28-July 1. Chief, Mr. Herbert J. Hamilton, Education Bldg., Albany.

North Dakota: Grand Forks, July 6. Sec., Dr. G. M. Williamson, Grand Forks.

Oregon: Portland, July 6-8. Sec., Dr. U. C. Coe, 1208 Stevens Bldg., Portland.

Pennsylvania: Philadelphia and Pittsburgh, July 6-10. Director Education, C. D. Koch, Harrisburg.

Rhode Island: Providence, July 1-2. Sec., Dr. B. U. Richards, 315 State House, Providence.

South Dakota: Custer, July 20. Director, Med. Lic., Dr. H. R. Kenaston, Bonesteel.

Utah: Salt Lake City, July 6. Dir., Mr. J. T. Hammond, 412 State Capitol Bldg., Salt Lake City.

Washington: Olympia, July 6. Director, Dept. of Licenses, Mr. Charles R. Maybury, Olympia.

West Virginia: Martinsburg, July 6. Sec., Dr. W. T. Henshaw, Charleston.

Wisconsin: Milwaukee, June 29-July 1. Sec., Dr. Robert E. Flynn, State Bank Bldg., La Crosse.

District of Columbia April Examination

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of District of Columbia, reports the oral and written examination held at Washington, April 13-15, 1926. The examination covered 16 subjects and included 80 questions. An average of 75 per cent was required to pass. Of the 12 candidates examined, 11 passed and 1 failed. Seven candidates were licensed by reciprocity. The following colleges were represented:

College PASSED	Year Grad.	Per Cent
George Washington University Medical School	(1925)	86.4
Howard University School of Medicine	(1925)	75.8, 76.6, 82.5
Loyola University School of Medicine	(1919)	77.8
University of Kansas School of Medicine	(1920)	83.8
Tulane University of Louisiana School of Medicine	(1907)	77.6
John A. Creighton Medical College	(1919)	87.3
University of Pennsylvania School of Medicine	(1908)	84
University of Western Ontario School of Medicine	(1917)	83.9
University of Copenhagen, Denmark	(1921)*	88.1

College FAILED	Year Grad.	Per Cent
Howard University School of Medicine	(1925)	71.1

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
George Washington University Medical School	(1920)	Virginia
Rush Medical College	(1911)	Maryland
University of Maryland School of Medicine	(1921)	Maryland
Medical College of Ohio	(1895)	Colorado
University of Pennsylvania School of Medicine	(1898)	Penna.
University of West Tennessee Coll. of Med. and Surg.	(1917)	Tennessee
Medical College of Virginia	(1922)	Virginia

* Verification of graduation in process.

New Hampshire Reciprocity Meeting

Dr. Charles Duncan, secretary of the New Hampshire Board of Medical Examiners, reports that 9 candidates were licensed by reciprocity at the meeting held at Concord, March 11-12, 1926. The following colleges were represented:

College LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Indiana Medical College	(1907)	Indiana
Boston University [illegible]	[illegible]	Mass.
Tufts College Medi[illegible]	[illegible]	Mass.
Cornell University [illegible]	[illegible]	New York
Woman's Medical College of Pennsylvania	(1906)	Penna.
University of Vermont College of Medicine	(1903), (1922)	Vermont

Book Notices

Caesarean Section. With a Table of 120 Cases. By Herbert R. Spencer, M.D., B.S., F.R.C.P., Consulting Obstetric Physician to University College Hospital. Cloth. Price, $2.75. Pp. 71, with 5 illustrations. New York: William Wood & Co., 1925.

In this interesting book the author reviews his entire experience with cesarean section. Since 1892 he has performed 120 of these operations, the records of which are tabulated and critically analyzed. The number of operations is not greater because at the University College Hospital, where 110 of the operations were performed, premature labor is induced three and a half times as often as cesarean section is done for contracted pelves. In this hospital the incidence of cesarean section is 5.5 per thousand. Indications for the operation were noted as follows: contracted pelvis, ninety-eight, with two deaths; myoma, nine, with one death; pelvic enchondroma, one, which ended fatally; accidental hemorrhage, four; vaginal and uterine scars, three; ovarian tumors, three; ventrifixation, one; cancer of the cervix, one, and placenta praevia, one. Only thirty-five patients were in labor at the time of the operation because the author believes that the best time to operate is before labor has begun. Many operators, however, feel that the most favorable time is after the patient has had some labor pains. All of Spencer's operations were of the classic type, and in all the cases the uterine incision was sutured with phenolized floss silk. In the United States nearly all operators prefer catgut to silk for closure of the uterus. The maternal mortality was 3.3 per cent. The immediate fetal death rate was 4.1 per cent, but the entire fetal mortality was 10 per cent. At present the patients are given chloroform until the baby is delivered, and after that ether. The author feels that chloroform is much less dangerous to the babies than ether. Although Spencer has never performed a cervical cesarean section, he condemns this type of operation. While some of his objections apply to the extraperitoneal cervical operation, they do not hold good for the transperitoneal operation. For example, Spencer mentions that after the cervical operation adhesions are troublesome, and during the operation injury to the bladder and ureter frequently occur. There is also an insinuation concerning rupture of the cervical scar. To date there have been only ten ruptures of the lower uterine segment following transperitoneal cervical cesarean section. The total number of these operations which have been performed all over the world is unknown, but 3,600 have been reported in the literature, and, if we use this number alone as a basis, the incidence of rupture is 0.28 per cent, as compared with 4 per cent for the classic operation, reported by Holland. Adhesions are very uncommon after the transperitoneal operation even in the cases in which more than one operation have been performed. While injuries to the bladder and ureter occur during the extraperitoneal operation, they are practically unknown in the transperitoneal. Spencer is correct when he says that the cervical operation consumes more time. However, the advantages of the new operation outweigh the disadvantage of time, and if the operation is performed under local anesthesia, the time element in most of the cases is not important. Spencer believes that cesarean section need rarely be done for eclampsia, antepartum hemorrhage and advanced age of the patient associated with myoma or malpresentation, and should not be employed in cases of heart disease.

Diagnostische und therapeutische Irrtümer und deren Verhütung Chirurgie. Herausgegeben von Prof. Dr. J. Schwalbe, Geh. San.-Rat *in* Berlin. *Siebentes Heft.* Verletzungen und chirurgische Krankheiten der Mund- und Rachenhöhle, des Halses einschl. der Speicheldrüsen, der Speiseröhre, des Kehlkopfes und der Trachea. Von Prof. Dr. Paul Clairmont, Vorstand der chirurgischen Klinik in Zurich. Paper. Price, 8.10 marks. Pp. 188, with 97 illustrations. Leipsic: Georg Thieme, 1926.

This volume, on the injuries and surgical diseases of the mouth, pharynx and neck together with the salivary glands, esophagus, larynx and trachea, forms the seventh section of the division of surgery, and is written by Professor Clairmont of the surgical clinic in Zurich. Many practical points with reference to the proper diagnosis and th errors, as well as the various complications involving the parts under discussion, are given. Altogether, this small volume presents in a readable and intelligible manner many items of great practical importance to students and surgeons interested in the upper part of the respiratory and digestive tracts.

Physiotherapy. Theory and Clinical Application. By Harry Eaton Stewart, M.D., Attending Specialist in Physiotherapy, U. S. Marine Hospitals, N. Y. Cloth. Price, $7.50. Pp. 351, with 66 illustrations. New York: Paul B. Hoeber, Inc., 1925.

This is a brief outline of physical therapeutic methods based largely on the author's experience in the government rehabilitation service. The description of the apparatus is simple, and the suggestions as to the tehcnic of application are easily followed. The author is unfortunately uncritical in his consideration of the available literature, accepting almost any writer on the subject as an authority, and without reference as to whether or not his work may have been carefully controlled. The tone of the book is highly optimistic, and the therapeutic considerations regularly disregard well established methods in order to recommend unestablished physical therapeutic measures. It is perhaps unfortunate that this field of therapeutics advances by the costly trial and error methods of empiricism, rather than by the more careful but somewhat less renumerative methods of scientific laboratory and clinical investigation.

Artificial Sunlight and Its Therapeutic Uses. By Francis Howard Humphris, M.D., F.R.C.P., M.R.C.S., Hon. Consulting X-Ray Physician to the American Hospital in London. Second edition. Cloth. Price, $2.75. Pp. 203, with 15 illustrations. New York: Oxford University Press, 1925.

Current interest and enthusiasm for heliotherapy in the treatment of disease have necessitated the prompt appearance of the second edition of this book. It is a monograph in beautifully printed form and, in general, conservative. Unfortunately, Dr. Humphris, like most other authors who specialize in one method of treatment, is inclined to overemphasize that method to the disadvantage of long established and more certain methods.

Handbuch der speziellen pathologischen Anatomie und Histologie. Herausgegeben von F. Henke und O. Lubarsch. Zwölfter Band. Gehörorgan. Bearbeitet von A. Eckert, M. Koch, W. Lange, H. Marx, H. G. Runge, O. Steurer und K. Wittmaack. Paper. Price, 84 marks. Pp. 802, with 640 illustrations. Berlin: Julius Springer, 1926.

This volume, on the ear, forms a section of the large handbook of special pathology, anatomy and histology. The first section deals with the technic of the pathologic and anatomic examination. The next subject, the inflammatory processes of the ear, is dealt with by Wittmaack. The latter has also written the third section, on the development of intracranial and septicopyemic complications, as well as the fourth section, on regressive, degenerative and dystrophic processes in the ear. The next section, on malformation of the ear, is by Marx. Runge has written the eighth section, on the relation between the pathologic findings to the function of the ear. The final, or ninth, chapter deals with foreign bodies and animal parasites in the ear, and is written by Max Koch. Complete bibliographies are appended to each section, and the whole work is an excellent exposition of the subject it presents.

Everyday Meals for Invalids. A Collection of Tiny Recipes, Tasty and Nourishing, for Every Day in the Year. By May Tremel. Cloth. Price, $1.25. Pp. 188. New York: Greenberg, Publisher, Inc.

This is essentially a collection of recipes planned to provide enough for one person for one meal and to fill the usual medical wants of nonsolid diet, very light diet, light diet, and convalescent diet. The suggestions should be helpful to those charged with the care of an invalid in the home.

William Cadogan [His Essay on Gout]. By John Ruhräh, M.D., Professor of Diseases of Children, University of Maryland. Cloth. Price, $1.50. Pp. 114, with 1 illustration. New York: Paul B. Hoeber, Inc., 1925.

This is a reprint of an essay originally published in the *Annals of Medical History*. The unusual original article by Cadogan, which attracted wide attention when first printed in 1771, and a poem which circulated about the town at that time supplement Ruhräh's introduction.

History of Medicine. By Dr. Max Neuburger, Professor of Medical History in the University of Vienna. Translated by Ernest Playfair, M.B., M.R.C.P. In two volumes. Vol. II. Part I. Paper. Price, $2.25. Pp. 135. New York: Oxford University Press, 1925.

The first volume of Neuburger's History of Medicine has been before the medical public for many years, a monumental work which has established a standard that is at once the admiration and the despair of other medical historians. Unfortunately, the second volume has repeatedly been delayed by many uncontrollable conditions, including, of course, the Great War. The publishers now present part one of volume II, including chapters on medieval medicine, Arabic influence on Western medicine, medicine in the later middle ages, and a historical survey of medieval literature. The publisher also announces that the remaining parts of the English edition will appear "as and when the German original is published."

A General Textbook of Entomology. Including the Anatomy, Physiology, Development and Classification of Insects. By A. D. Imms, M.A., D.Sc., Chief Entomologist, Rothamsted Experimental Station, Harpenden. Cloth. Price, $12. Pp. 698, with 604 illustrations. New York: E. P. Dutton & Co.

This is a textbook planned distinctly for the specialist rather than for the physician who is interested primarily in insect transmission of disease. The book is well printed and illustrated, and supplied with good bibliographies.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits.

Clinique médicale des enfants: Troubles de la nutrition et de la croissance. Par P. Nobécourt, Professeur de clinique médicale des enfants à la Faculté de médecine de Paris. Paper. Price, 36 francs. Pp. 404, with 113 illustrations. Paris: Masson et Cie, 1926.

Report of French pediatric clinic.

Allgemeine und spezielle Pathologie der Person: Klinische Syzygiologie. Von Prof. Fr. Kraus. Teil. I: Tiefenperson. Paper. Price, 18 marks. Pp. 252. Leipsic: Georg Thieme, 1926.

First part of encyclopedic consideration of what makes the man go.

La radiologie du médecin practicien: Radiodiagnostic des maladies de l'appareil digestif. Par R. Ledoux-Lebard. Paper. Price, 30 francs. Pp. 288, with illustrations. Paris: Masson et Cie, 1925.

Brief monograph on gastro-intestinal roentgenology.

Thomas Sydenham, Clinician. By David Riesman, M.D., Professor of Clinical Medicine, University of Pennsylvania. Cloth. Price $1.50. Pp. 52, with 1 illustration. New York: Paul B. Hoeber, Inc., 1926.

Attractive contribution to medical history.

Psychotherapie: Ein Lehrbuch für Studierende und Aerzte. Von Dr. Max Isserlin, Professor an der Universität in München. Paper. Price, 9 marks. Pp. 205. Berlin: Julius Springer, 1926.

Brief and rational consideration.

Petit précis annuel 1926 médical. Par A. Cantonnet, Ophthalmologiste des hôpitaux de Paris. Paper. Price, 8 francs. Pp. 177. Paris: A. Maloine, 1926.

Abstracts of current literature.

Modern Medicine: Its Theory and Practice in Original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M.D., F.R.S. Third edition, Revised and Reedited by Thomas McCrae, M.D., Professor of Medicine in the Jefferson Medical College, Philadelphia. Assisted by Elmer H. Funk, M.D., Assistant Professor of Medicine, Jefferson Medical College, *Philadelphia*. Volume III. Diseases of Metabolism —Diseases of the Digestive System. Cloth. Price $9. Pp. 1052, with illustrations. Philadelphia: Lea & Febiger, 1926.

Handbuch der biologischen Arbeitsmethoden. Herausgegeben von Geh. Med.-Rat Prof. Dr. Emil Abderhalden, Direktor des physiologischen Institutes der Universität Halle a. d. Saale. Abt. VI, Methoden der experimentellen Psychologie, Teil A, Heft 5. Psychologische Studien am Geruchssinn. Von Hans Henning. Lieferung 189. Paper. Price. 4.50 marks. Pp. 741-836, with illustrations. Berlin: Urban & Schwarzenberg, 1926.

Leçons de pathologie digestive. Par M. Loeper, Professeur agrégé à la Faculté de médecine de Paris. Sixth series. Paper. Price, 22 francs. Pp. 272, with 43 illustrations. Paris: Masson et Cie, 1925.

Medicolegal

Basis of Compensation for Injury to Vision

(Alessandro Petrillo Co. v. Marioni (Del.), 131 Atl. R. 164)

The Superior Court of Delaware holds that, a workman having sustained an injury to his left eye which resulted in an 80 per cent loss of vision, in computing an award for his fractional loss of vision, such award should be based on the percentage of the loss of vision without the use of glasses. It might be true that an artificial instrumentality, such as glasses or a corrective lens, might subsequently be used, by virtue of which the loss of vision might be reduced from 80 per cent to 10 per cent during the time such glasses were actually in use; but the loss suffered by the injury would remain the same, which was the compensable basis. The very fact that artificial instrumentalities such as glasses, braces and artificial limbs are necessary to be used is in itself evidence of the permanence of the injury, but the use of the mechanism itself, although it may allow a member to function with entire normality, cannot obliterate the effect of the accident causing the injury. A number of cases were cited from the jurisdictions of New York, Pennsylvania and Michigan as having arrived at different conclusions from the one herein reached. It may be sufficient to suggest that these cases were determined on their particular statutory enactments. Most or all seemed to be founded on statutes based on the theory that compensation was payable only in cases such as the present one when the accident led to loss of earning power. The workmen's compensation act of Delaware makes a permanent injury to an eye compensable regardless of the earning power of the injured employee after the injury, and this court is of the opinion that the action of the industrial board in basing the award in this case on the loss of vision without the use of a corrective lens should be affirmed.

Payments by Employer for Medical Services

(Johnson et al. v. J. P. Taylor Co. (Ky.), 278 S. W. R. 169)

The Court of Appeals of Kentucky says that in this proceeding under the workmen's compensation act the compensation board awarded the claimant compensation for a permanent partial disability and in addition allowed him $100 for medical services. But the Kentucky statute allows only a maximum of $100 for medical services, and the testimony in this case showed that the employer had voluntarily paid for at least some of the medical services rendered to its injured employee—the claimant. The compensation board took no cognizance of those payments, but allowed the full maximum sum of $100, as just stated. The board should have credited that sum with whatever amount the employer had paid, and awarded only the difference. It should therefore correct its award in this particular.

Duty of Employer Knowing Employee to Be an Epileptic

(Monteith v. Manchester Rendering Co. (N. H.), 131 Atl. R. 440)

The Supreme Court of New Hampshire, in overruling exceptions to a charge to the jury in this action in which there was a verdict for the plaintiff, says that the plaintiff was an epileptic, and the defendant excepted to an instruction that its knowledge of the plaintiff's disease was a circumstance in the light of which its conduct in furnishing a place for him to work was to be judged. The defendant's knowledge of the plaintiff's condition entitled him to special protection so far as due care would give it to him, and the instruction was correct in its application to an injury sustained when the plaintiff had an epileptic attack. It might be conceded that the instruction was given too broadly in its general application regardless of the plaintiff's having or not having an attack when hurt, since the defendant owed him no duty of special protection except as related to an attack. In the absence of an attack, the breach of duty to guard against it could not be made a ground of liability. Causal connection between such breach and the injury would be missing. But the exception to the instruction did not present that feature of it for consideration; that is, that the instruction should be limited to the situation of the plaintiff's having an attack when hurt.

Health Laws May Impose Heavy Financial Burdens

(Chicago & N. W. Ry. Co. v. Railroad Commission (Wis.), 205 N. W. R. 932)

The Supreme Court of Wisconsin, in affirming a judgment that affirmed an order of the railroad commission made pursuant to a statute of the state requiring railroad companies operating in the state of Wisconsin to equip their locomotives with cab curtains of a prescribed protective efficiency, says that the court does not think that there is anything in the contention that the law or the order imposes an undue burden on interstate commerce. If the court is correct, it is a law which the state has plenary power to pass in the interest of the public health. As a rule, such laws impose a burden on some one, but it is a burden that must be borne for the public good. A health law is not invalid because compliance with it may carry heavy financial burdens. If the state had power to pass this law, railroad companies cannot refuse compliance therewith because of the burdens imposed. If the validity of the law depends on the reasonableness of the burden laid on interstate commerce, then all circumstances are to be taken into consideration, and perhaps the conclusion reached becomes more a matter of human judgment than fixed rules or principles.

Compensation for Services of Family Physician

(Succession of Bouziga (La.), 106 So. R. 328)

The Supreme Court of Louisiana says that the final accounting of the administration in the succession of the estate of Mrs. Bouziga was opposed by a physician who alleged that he was a privileged creditor of the succession in the sum of $5,000, with legal interest thereon from Jan. 1, 1924, for professional services rendered Mrs. Bouziga from Jan. 30, 1923, until her death, Dec. 27, 1923. The evidence disclosed that Mrs. Bouziga, who was 77 years of age when she died, was stricken with a cerebral hemorrhage on or about Jan. 30, 1923, and that this physician was called in to treat her. At first her condition improved. Later she developed Bright's disease, and a few days afterward grippal pneumonia. Several weeks after that she developed erysipelas, and, in her declining condition, and at her advanced age, developed senile gangrene and infectious vesicles, which had to be ruptured. She also suffered from incontinence of urine and feces. She left an estate valued at a little over $27,000. Her income was about $100 a month.

The number of visits paid by a physician to his patient, during a protracted illness, is a factor in determining the compensation to which he is entitled. The number of visits paid by this physician to Mrs. Bouziga during the eleven months' period that he attended her was in dispute. The trial judge, after considering the evidence, fixed the number at 300, and the examination of the record by this court led it to the conclusion that there was no reason to disturb his finding in that respect. The services rendered by the physician were those of a family physician. The expert evidence offered to show their value was conflicting. The trial court found that he was entitled to $1,500, but the supreme court's appreciation of the evidence leads it to the conclusion that this was excessive. After considering the number of visits made by the physician, the nature of the maladies from which Mrs. Bouziga suffered, and her means to pay, all of which should be taken into consideration, the opinion of the supreme court is that the evidence justified the conclusion that the physician was entitled to $1,000 and no more, and that the judgment for $1,500 should be reduced accordingly. Wherefore it is ordered that the judgment be amended by reducing the amount allowed from $1,500 to $1,000, and, in all other respects, including the allowance of interest and the recognition of the privilege prayed for, that it be affirmed; the costs of this appeal to be paid by the physician. Rehearing denied.

Society Proceedings

COMING MEETINGS

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.

Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.

Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty First Annual Meeting, held at Atlantic City, N. J., May 4-5, 1926

(Continued from page 1937)

Cirrhosis of the Liver Resulting from Acute Yellow Atrophy

Drs. Joseph H. Pratt, Boston, and Alfred Stengel, Philadelphia: We have found twelve cases among 5,000 of toxic cirrhosis. Our ideas of acute yellow atrophy should be revised. Many cases present the picture of catarrhal jaundice, but are really acute yellow atrophy in which recovery occurs. The textbook description really applies to the severe fatal case.

DISCUSSION

Dr. Jonathan Meakins, Montreal: In Edinburgh the alcoholic type of cirrhosis of the liver is practically unknown. I did not see one case during five years in Edinburgh with this diagnosis, but one woman of 50 was admitted to the Royal Infirmary for some acute condition associated with jaundice. There were leucine and tyrosine crystals in the urine. She had an acute infection in the throat, large abscesses, but was not syphilitic. The jaundice persisted in a mild form. Finally, the woman returned with a severe, acute exacerbation of the jaundice which was very deep. She died and the postmortem showed an acute exacerbation of the necrosis superimposed on previous infection. There was another case, a man of 30, with intense jaundice and great prostration. He had apparently a case of acute yellow atrophy, with leucine and tyrosine in the urine. He recovered with good health, and returned four years later with all the symptoms of acute portal obstruction, from which he died. Necropsy showed a definite cirrhosis of the liver. I was interested to find how often cirrhosis of the liver occurred in Edinburgh, when, according to the records, there are very few cases.

Dr. Alfred Stengel, Philadelphia: Our notions of acute yellow atrophy require fundamental revision. We are dealing with an entity that attaches itself to a number of underlying states. For instance, patients with chronic liver disease frequently die of acute yellow atrophy. We can show that it is acute catarrhal jaundice recognized by all strict criteria, and sometimes terminates as acute yellow atrophy. Acute yellow atrophy is a misnomer when recorded as a fatal disease, but it may be subacute or it may lead to recovery with replacement of cirrhosis and cirrhotic states. It seems rather peculiar that in proving recovery of patients with acute yellow atrophy we should prove it by the few fatal cases, but the recovery refers to previous states. Oomherr said it should be called acute red atrophy of the liver, the liver was so red at operation. Another objection to the term is that it is not entirely an acute disease but comes in acute attacks.

Hyperthyroidism and Diabetes

Dr. Russell M. Wilder, Rochester, Minn.: Patients with hyperthyroidism, even with a trace of sugar in the urine, respond to the glucose test meal by a rise in the respiratory quotient; therefore these patients are not diabetic. When we speak of derangement of carbohydrate metabolism in hyperthyroidism, in cases with true diabetes associated with hyperthyroidism, we are dealing with very rare cases, only nine having been found among 1,800 cases. In a study of 2,300 cases, I found thirteen cases of diabetes. This figure was not high enough to warrant the assumption that the thyroid plays a rôle in the etiology of diabetes. However, when the patient has diabetes, the complication of hyperthyroidism aggravates it and increases the insulin requirement. Iodine acts very favorably on the tolerance of the diabetic patient, and thyroidectomy, which reduces the metabolic rate, acts favorably in such complicated cases. Hyperthyroidism, which causes rise in metabolism, is a very dangerous complication. Drugs that lower the metabolism in hyperthyroidism have a good effect on the tolerance of the patient with diabetes. The only exception to this rule is exercise, which seems to have the reverse effect. These observations deserve especial attention, the most significant thing being the influence of iodine in diabetes. This drug improves tolerance by lowering the metabolic rate, and when it does not lower the metabolic rate it has no influence. Therefore the body requires a given quantum of glucose, but it requires more insulin when the cell is stimulated by hyperthyroidism, which causes it to convert energy at a more rapid rate. The patient with no diabetes has more than enough insulin to meet excessive demands, but the patient with diabetes has not enough insulin for excess demands.

DISCUSSION

Dr. Henry A. Christian, Boston: The explanation given by Dr. Wilder is probably correct. A hyperthyroid condition overdrives the circulation, and if we carry out therapeusis for circulatory disease we undertake to give complete rest. Perhaps the ideal rest is in the condition of hypothyroidism, so that if we reduce thyroid efficiency we increase the potential efficiency of the circulation. If the patient has myxedema and also organic circulatory disturbance, we are confronted with a problem of curing the myxedema without harming the circulation. We sometimes have the problem of myxedema with anemia, combined with a myocardial lesion, which seems to be the effect of the myxedema. It is necessary to improve the anemia by improving the myocardial condition by giving thyroid, but we are limited by the response in the already injured heart muscle. That relation between circulatory disturbance and thyroidism parallels closely diabetes with hyperthyroidism or hypothyroidism.

Dr. Elliott P. Joslin, Boston: When a diabetic patient has symptoms of hyperthyroidism, one should relieve the patient of the cause of the symptoms. Diabetic patients with hyperthyroidism should be operated on. The greatest emergency is the danger of overfeeding. Injudicious feeding, fever or any other cause that increases metabolism, such as hyperthyroidism, must be guarded against.

Dr. W. M. Boothby, Rochester, Minn.: Another group of patients who are very important are those with diabetic coma, who do not respond to the usual dosage of insulin, and have no infection. In such cases there may be a combination of hyperthyroidism and diabetic coma. We should be on guard for cases of diabetes combined with adenomatous goiter with hyperthyroidism. Probably it would not be worth while to make a differential diagnosis. It would be sufficient to establish that there was hyperthyroid activity, and to give large doses of compound solution of iodine, approximating 100 minims (6 cc.) in the first twenty-four hours.

Dr. Russell M. Wilder, Rochester, Minn.: We have given thyroxin to a well controlled patient receiving insulin, with severe diabetes. We mixed the thyroxin with the insulin. We let it stand for twenty-four hours and then injected it. If the old theories were right, we should see immediate effect, but we got response after thirty-six hours. When the basal metabolic rate went up, we have let it stand seventy-two hours. In our observations on hyperthyroidism we found that when the liver is empty of glycogen it has an important clinical bearing. Patients with hyperthyroidism very frequently have livers that are poor in glycogen; and, being poor in glycogen, doses of insulin produced very severe hypoglycemia. One case occurred in which the surgeon did not understand what the collapse of the patient was due to. The surgeons had taken the blood pressure and were surprised to find that it was high. When glucose was injected, the patient recovered from collapse and the blood pressure fell. There can be a hyperpyesia in hypoglycemia. Hypoglycemia occurs in a patient with collapse.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

9: 241-320 (April) 1926

Coloboma of Optic Nerve. M. L. Lerner, Rochester, N. Y.—p. 241.
Tuberculosis of Eye. J. E. Weeks, New York.—p. 243.
Fusion Faculty: Some Anomalies. W. B. Lancaster, Boston.—p. 247.
Contributing Factors in Failure to Correct Convergent Concomitant Squint. L. C. Peter, Philadelphia.—p. 253.
Intra-Orbital Anesthesia. M. D. Icove, San Francisco.—p. 260.
Lid Traction: Greatest Safeguard Against Vitreous Loss in Cataract Operations. P. Obarrio, San Francisco.—p. 264.
Improved Technic for Iridectomy for Glaucoma. G. F. Suker and B. Cushman, Chicago.—p. 268.
How to Avoid Toxic Symptoms from Homatropine. W. H. Crisp, Denver.—p. 270.
New Method (Suction) for Removal of Foreign Bodies on Cornea. S. Israel, Houston, Texas.—p. 271.
Ocular Findings in Postencephalitic Syndrome. L. Lehrfeld, Philadelphia.—p. 272.
Breath Screen for Slit Lamp Work. C. Stockard, Atlanta.—p. 273.

Annals of Surgery, Philadelphia

83: 449-576 (April) 1926

Management of Advanced Cancer of Stomach. N. W. Green, New York.—p. 449.
*Abdominal Puncture in Diagnosis of Acute Intraperitoneal Disease. H. Neuhof and I. Cohen, New York.—p. 454.
*Local Versus General Anesthesia for Upper Abdominal Operations: Comparison of Postoperative Conditions. J. T. Mason, Seattle, Wash.—p. 463.
Penetrating Gastric Ulcer, Situated Near Cardia: Visualization of Cardia. R. Lewisohn, New York.—p. 466.
Peptic Ulcer of Meckel's Diverticulum. E. Stulz and P. Woringer, Strasbourg, France.—p. 470.
Dilation of Common Bile Duct in Absence of Functioning Gallbladder. R. C. Coffey, Portland, Ore.—p. 479.
*Aseptic End-to-End Suture of Intestine. J. E. Scarff, Baltimore.—p. 490.
*Tuberculosis of Cecum. J. W. Larimore and A. O. Fisher, St. Louis.—p. 496.
*Experimental Results in Use of Dead Fascia Grafts for Hernia Repair. A. R. Koontz, Baltimore.—p. 523.
Skin Plastics in Treatment of Traumatic Lesions of Hand and Forearm. H. H. M. Lyle, New York.—p. 537.

Abdominal Puncture in Diagnosis of Acute Intraperitoneal Disease.—Exploratory abdominal puncture is said by Neuhof and Cohen to be a simple, safe, and valuable aid in the diagnosis of obscure acute intra-abdominal disease. It serves to establish the diagnosis of a traumatic or inflammatory intraperitoneal lesion in some cases in which the diagnosis cannot otherwise be made. In other instances, abdominal puncture offers conclusive information as to the source and nature of a peritonitis, and thus aids directly in arriving at the therapeutic indication as well as the prognosis. In the peritonitis group, abdominal puncture is of especial value in establishing the diagnosis of the pneumococcus and streptococcus infections. Abdominal puncture is contraindicated in any subacute or chronic intra-abdominal disease in which a loop of intestine may be fixed. A negative abdominal puncture does not exclude the presence of fluid and should therefore never be interpreted as a contraindication to operation in suspected peritonitis or traumatic visceral lesions. Abdominal puncture should be employed as an aid to diagnosis in every obscure acute intraperitoneal lesion for which operation may be indicated.

Local and General Anesthesia in Laparotomy.—One hundred consecutive upper abdominal operations have been studied. Fifty of these were performed under ether and fifty under local, or local and gas anesthesia. All operations were performed by one surgeon, in the same hospital, with practically no changes in the surgical staff or the floor nurses. General anesthesia was induced by the inhalation of nitrous oxide and oxygen and continued with ether given by the open or drop method, an Esmarch inhaler being used. The local anesthesias were induced by infiltration of the anterior abdominal wall, followed by anterior splanchnic block. The solution used was a 0.5 per cent solution of procaine in 0.6 per cent sodium chloride, with 9 drops of epinephrine chloride added to each 100 cc. An average of only eight minutes more was required for each operation under local, than for each of the fifty under ether anesthesia. The average temperature for the first week after operation was below 99 F. in local cases and above 99 F. in ether cases. The average stay in the hospital after operation was three days less for the cases under local anesthesia. Of the local anesthetic patients only eighteen vomited, while thirty-three of the ether patients vomited. Also, in the latter, vomiting was more marked and more persistent. Only nineteen of those having a local anesthetic against thirty of the ether patients suffered gas pains. Severe shock was experienced only once in this series, and mild shock four times. This occurred each time after ether anesthesia. There was no surgical shock after anesthesia by local injections. Bronchitis was encountered in eleven patients taking ether and in three after local anesthesia. There was one pneumonia case. This patient, who was 59 years old, had an acutely diseased gallbladder and bilateral pyelitis. Operation was under local anesthesia and was successful from the operative standpoint. The patient died eight days after operation—the only death of this series. There was no hernia or phlebitis.

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Boston Medical and Surgical Journal

194: 759-808 (April 29) 1926

*Reticulated Red Cells. W. Dameshek, Boston.—p. 759.
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Chronic Fatigue in Schoolchild: Psychophysiologic Study. M. Seham, Minneapolis.—p. 770.

Reticulated Red Cells.—An analysis of the red blood cells in forty-nine cases of pernicious anemia is presented by Dameshek. He regards the reticulate count of the red cells as a true index of bone marrow activity. Before and at the beginning of any remission or permanent rise in red count, the reticulate count surpasses 6 per cent; as the culmination of the rise is reached, it gradually falls to normal (from 0.5 to 1 per cent). With bone marrow aplasia, the reticulate count is extremely low, practically nil. There is no better index to prognosis in pernicious anemia than the count of the reticulated cells. Although these are frequently increased, and an elevation up to 5 per cent represents probably regeneration going on in the face of greater destruction—a sudden rise in count to more than 6 per cent presages a coming remission, overbalancing destructive forces. Very grave are the continued low counts that bespeak forthcoming death.

Dr. Robert [illegible] Library
[illegible] Medical College

Society Proceedings

COMING MEETINGS

Associated Anesthetists of the United States and Canada, Nottingham, England, July 20-23. Dr. F. H. McMechan, Avon Lake, Ohio, Sec'y.
Montana, Medical Association of, Billings, July 16-17. Dr. E. G. Balsam, 222 Hart-Albin Building, Billings, Secretary.
Wyoming State Medical Society, Lander, July 12-13. Dr. Earl Whedon, Sheridan, Secretary.

ASSOCIATION OF AMERICAN PHYSICIANS

Forty-First Annual Meeting, held at Atlantic City, N. J., May 4-5, 1926

(Continued from page 1937)

Cirrhosis of the Liver Resulting from Acute Yellow Atrophy

Drs. Joseph H. Pratt, Boston, and Alfred Stengel, Philadelphia: We have found twelve cases among 5,000 of toxic cirrhosis. Our ideas of acute yellow atrophy should be revised. Many cases present the picture of catarrhal jaundice, but are really acute yellow atrophy in which recovery occurs. The textbook description really applies to the severe fatal case.

DISCUSSION

Dr. Jonathan Meakins, Montreal: In Edinburgh the alcoholic type of cirrhosis of the liver is practically unknown. I did not see one case during five years in Edinburgh with this diagnosis, but one woman of 50 was admitted to the Royal Infirmary for some acute condition associated with jaundice. There were leucine and tyrosine crystals in the urine. She had an acute infection in the throat, large abscesses, but was not syphilitic. The jaundice persisted in a mild form. Finally, the woman returned with a severe, acute exacerbation of the jaundice which was very deep. She died and the postmortem showed an acute exacerbation of the necrosis superimposed on previous infection. There was another case, a man of 30, with intense jaundice and great prostration. He had apparently a case of acute yellow atrophy, with leucine and tyrosine in the urine. He recovered with good health, and returned four years later with all the symptoms of acute portal obstruction, from which he died. Necropsy showed a definite cirrhosis of the liver. I was interested to find how often cirrhosis of the liver occurred in Edinburgh, when, according to the records, there are very few cases.

Dr. Alfred Stengel, Philadelphia: Our notions of acute yellow atrophy require fundamental revision. We are dealing with an entity that attaches itself to a number of underlying states. For instance, patients with chronic liver disease frequently die of acute yellow atrophy. We can show that it is acute catarrhal jaundice recognized by all strict criteria, and sometimes terminates as acute yellow atrophy. Acute yellow atrophy is a misnomer when recorded as a fatal disease, but it may be subacute or it may lead to recovery with replacement of cirrhosis and cirrhotic states. It seems rather peculiar that in proving recovery of patients with acute yellow atrophy we should prove it by the few fatal cases, but the recovery refers to previous states. Oomherr said it should be called acute red atrophy of the liver, the liver was so red at operation. Another objection to the term is that it is not entirely an acute disease but comes in acute attacks.

Hyperthyroidism and Diabetes

Dr. Russell M. Wilder, Rochester, Minn.: Patients with hyperthyroidism, even with a trace of sugar in the urine, respond to the glucose test meal by a rise in the respiratory quotient; therefore these patients are not diabetic. When we speak of derangement of carbohydrate metabolism in hyperthyroidism, in cases with true diabetes associated with hyperthyroidism, we are dealing with very rare cases, only nine having been found among 1,800 cases. In a study of 2,300 cases, I found thirteen cases of diabetes. This figure was not high enough to warrant the assumption that the thyroid plays a rôle in the etiology of diabetes. However, when the patient has diabetes, the complication of hyperthyroidism aggravates it and increases the insulin requirement. Iodine acts very favorably on the tolerance of the diabetic patient, and thyroidectomy, which reduces the metabolic rate, acts favorably in such complicated cases. Hyperthyroidism, which causes rise in metabolism, is a very dangerous complication. Drugs that lower the metabolism in hyperthyroidism have a good effect on the tolerance of the patient with diabetes. The only exception to this rule is exercise, which seems to have the reverse effect. These observations deserve especial attention, the most significant thing being the influence of iodine in diabetes. This drug improves tolerance by lowering the metabolic rate, and when it does not lower the metabolic rate it has no influence. Therefore the body requires a given quantum of glucose, but it requires more insulin when the cell is stimulated by hyperthyroidism, which causes it to convert energy at a more rapid rate. The patient with no diabetes has more than enough insulin to meet excessive demands, but the patient with diabetes has not enough insulin for excess demands.

DISCUSSION

Dr. Henry A. Christian, Boston: The explanation given by Dr. Wilder is probably correct. A hyperthyroid condition overdrives the circulation, and if we carry out therapeusis for circulatory disease we undertake to give complete rest. Perhaps the ideal rest is in the condition of hypothyroidism, so that if we reduce thyroid efficiency we increase the potential efficiency of the circulation. If the patient has myxedema and also organic circulatory disturbance, we are confronted with a problem of curing the myxedema without harming the circulation. We sometimes have the problem of myxedema with anemia, combined with a myocardial lesion, which seems to be the effect of the myxedema. It is necessary to improve the anemia by improving the myocardial condition by giving thyroid, but we are limited by the response in the already injured heart muscle. That relation between circulatory disturbance and thyroidism parallels closely diabetes with hyperthyroidism or hypothyroidism.

Dr. Elliott P. Joslin, Boston: When a diabetic patient has symptoms of hyperthyroidism, one should relieve the patient of the cause of the symptoms. Diabetic patients with hyperthyroidism should be operated on. The greatest emergency is the danger of overfeeding. Injudicious feeding, fever or any other cause that increases metabolism, such as hyperthyroidism, must be guarded against.

Dr. W. M. Boothby, Rochester, Minn.: Another group of patients who are very important are those with diabetic coma, who do not respond to the usual dosage of insulin, and have no infection. In such cases there may be a combination of hyperthyroidism and diabetic coma. We should be on guard for cases of diabetes combined with adenomatous goiter with hyperthyroidism. Probably it would not be worth while to make a differential diagnosis. It would be sufficient to establish that there was hyperthyroid activity, and to give large doses of compound solution of iodine, approximating 100 minims (6 cc.) in the first twenty-four hours.

Dr. Russell M. Wilder, Rochester, Minn.: We have given thyroxin to a well controlled patient receiving insulin, with severe diabetes. We mixed the thyroxin with the insulin. We let it stand for twenty-four hours and then injected it. If the old theories were right, we should see immediate effect, but we got response after thirty-six hours. When the basal metabolic rate went up, we have let it stand seventy-two hours. In our observations on hyperthyroidism we found that when the liver is empty of glycogen it has an important clinical bearing. Patients with hyperthyroidism very frequently have livers that are poor in glycogen; and, being poor in glycogen, doses of insulin produced very severe hypoglycemia. One case occurred in which the surgeon did not understand what the collapse of the patient was due to. The surgeons had taken the blood pressure and were surprised to find that it was high. When glucose was injected, the patient recovered from collapse and the blood pressure fell. There can be a hyperpyesia in hypoglycemia. Hypoglycemia occurs in a patient with collapse.

(To be continued)

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to The Journal in America for a period of three days. No foreign journals are available prior to 1921, nor domestic prior to 1923. Periodicals published by the American Medical Association are not available for lending, but may be supplied on order. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested).

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Chicago

9: 241-320 (April) 1926

Coloboma of Optic Nerve. M. L. Lerner, Rochester, N. Y.—p. 241.
Tuberculosis of Eye. J. E. Weeks, New York.—p. 243.
Fusion Faculty: Some Anomalies. W. B. Lancaster, Boston.—p. 247.
Contributing Factors in Failure to Correct Convergent Concomitant Squint. L. C. Peter, Philadelphia.—p. 253.
Intra-Orbital Anesthesia. M. D. Icove, San Francisco.—p. 260.
Lid Traction: Greatest Safeguard Against Vitreous Loss in Cataract Operations. P. Obarrio, San Francisco.—p. 264.
Improved Technic for Iridectomy for Glaucoma. G. F. Suker and B. Cushman, Chicago.—p. 268.
How to Avoid Toxic Symptoms from Homatropine. W. H. Crisp, Denver.—p. 270.
New Method (Suction) for Removal of Foreign Bodies on Cornea. S. Israel, Houston, Texas.—p. 271.
Ocular Findings in Postencephalitic Syndrome. L. Lehrfeld, Philadelphia.—p. 272.
Breath Screen for Slit Lamp Work. C. Stockard, Atlanta.—p. 273.

Annals of Surgery, Philadelphia

83: 449-576 (April) 1926

Management of Advanced Cancer of Stomach. N. W. Green, New York.—p. 449.
*Abdominal Puncture in Diagnosis of Acute Intraperitoneal Disease. H. Neuhof and I. Cohen, New York.—p. 454.
*Local Versus General Anesthesia for Upper Abdominal Operations: Comparison of Postoperative Conditions. J. T. Mason, Seattle, Wash.—p. 463.
Penetrating Gastric Ulcer, Situated Near Cardia: Visualization of Cardia. R. Lewisohn, New York.—p. 466.
Peptic Ulcer of Meckel's Diverticulum. E. Stulz and P. Woringer, Strasbourg, France.—p. 470.
Dilation of Common Bile Duct in Absence of Functioning Gallbladder. R. C. Coffey, Portland, Ore.—p. 479.
*Aseptic End-to-End Suture of Intestine. J. E. Scarff, Baltimore.—p. 490.
*Tuberculosis of Cecum. J. W. Larimore and A. O. Fisher, St. Louis.—p. 496.
*Experimental Results in Use of Dead Fascia Grafts for Hernia Repair. A. R. Koontz, Baltimore.—p. 523.
Skin Plastics in Treatment of Traumatic Lesions of Hand and Forearm. H. H. M. Lyle, New York.—p. 537.

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The relapse in pernicious anemia is closely related or at least extremely similar to aplastic anemia, which with its evident bone marrow failure, has an almost absent reticulate count. Platelet regeneration and aplasia are apparently closely related to red cell growth, for in purpura hemorrhagica the reticulate count goes up before recovery and remains low, with impending death from hemorrhages In the field of diagnosis, the marked reticulosis in congenital hemolytic anemia is a pathognomonic point differentiating that disease from all other anemias with large spleens.

Canadian Medical Association Journal, Montreal

16: 349 486 (April) 1926

Nephrosis. W Boyd, Winnipeg, Manit —p 349
Complement in Health and in Disease F. T. Cadham, Winnipeg, Manit. —p 352
Roentgen Rays and Radium in Management of Breast Carcinoma. G E. Richards, Toronto —p 358
*Influence of Dihydroxyacetone on Blood Sugar and Glycosuria. E. H. Mason, Montreal —p 367.
*Definition and Classification of Pseudoleukemias T. R. Waugh, Montreal —p 374
Hemolytic Jaundice Associated with Splenomegaly. W. E Gallie and R M Janes, Toronto —p 379
*Splenectomy for Purpura Hemorrhagica R I Harris, Toronto —p 384.
*Blood Regeneration N B Eddy and A W Downs, Edmonton, Alta. —p 391
Leprosy in Montreal Case C R Bourne, Montreal —p 395
Plaster Shells in Treatment of Tuberculosis and Fracture of Spine. A P MacKinnon, St Boniface, Manit —p 399
Case of Mercuric Chloride Poisoning by Genital Tract (Vaginal Douche). J Miller, Kingston, Ont —p 403
Case of Dural Endothelioma with Xanthochromia L M Lindsay, Montreal —p 407
*Potency of Tinctures of Digitalis and Strophanthus Purchased at Various Points on Canadian Market F W Ward, Ottawa —p 409
Use of Nonspecific Foreign Protein in Treatment of Inflammatory Lesions in Female Pelvic Organs A D Campbell, Montreal —p 413
Tuberculosis Complications in Digestive Tract in Course of Pulmonary Disease R J Collins and G. L Leslie, River Glade, N B —p 417
*Use of Ephedrine in Bronchial Asthma H E MacDermot, Montreal —p 422
Tracheal Collapse During Thyroidectomy C K P Henry, Montreal. —p 424
Case of Obstinate Urethral and Rectal Retention Cured by Psycho Analytic Methods N Viner, Montreal —p 425
Phrenicotomy in Traumatic Injury to Chest W P Warner, Welland, Ont —p 427
Nontoxic Goiter with Nervous Symptoms H O Foucar, London, Ont —p 428
Pituitary Extract in Asphyxia Pallida. J B Mann, Peterborough, Ont. —p 429

Influence of Dihydroxyacetone on Blood Sugar and Glycosuria.—Thirty-four cases are reviewed by Mason He shows that, in patients with a normal carbohydrate tolerance, the ingestion of dihydroxyacetone in 25 or 50 Gm doses results in a very slight transitory rise in the blood sugar. When it is given in small interrupted doses, there is a progressive fall. In diabetes mellitus the increment increase in blood sugar is not as great after dihydroxyacetone as after a like dose of glucose. When it is introduced intravenously in a dose of 25 Gm, diabetic patients, with a fair carbohydrate tolerance, show very little rise in the blood sugar. Dihydroxyacetone, ingested in small but frequent doses in three cases of diabetes mellitus in short period experiments, could not be accounted for by the glucose excretion and the tissue retention. The results are suggestive that in certain cases of diabetes mellitus the ingested dihydroxyacetone is not quantitatively converted into glucose.

Classification of Pseudoleukemia.—Waugh divides the leukemias into three varieties· clinical, hematologic and histologic. Clinically, pseudoleukemia stands for a quite distinct symptom complex. The hematologic pseudoleukemias are characterized by a blood picture which simulates that of a leukemia. Pseudoleukemias in the histologic sense include, among others, the metaplasias and status lymphaticus.

Splenectomy for Purpura Hemorrhagica.—The case reported by Harris was one of essential thrombocytopenic purpura of severe degree, occurring in a girl, aged 11. Transfusion was of some palliative value, but splenectomy produced an immediate cure. The clinical picture and the result from splenectomy are in accord with previously reported cases.

Blood Regeneration.—The dietary factors which Eddy and Downs have found to favor production of hemoglobin and red blood corpuscles, arranged in the order of their importance, are cooked beef liver, lean beef and beef heart, spinach and beet tops, fruits and other green vegetables. Rigidly controlled experiments failed to show any beneficial effect on blood regeneration of arsenic or germanium dioxide, and iron was effective only if the iron reserve of the organism was exhausted. Favorable results have been obtained by the oral administration of dried powdered spleen and red bone marrow in the majority of cases of secondary anemia in which the combination has been tried. Experimental findings strongly suggest a trial of secretin in similar cases.

Potency of Digitalis and Strophanthus Tinctures.—The samples of tincture of digitalis assayed by Ward varied in strength from 30 to 150 per cent, or from a point 70 per cent below the standard of the U. S. Pharmacopeia, to a point 230 per cent above the same standard; that is, some samples are ten times as strong as others. This variation is between samples put out by two different manufacturers. But the samples of the same manufacturer vary; one sample has not been found as strong as another sample purchased elsewhere or at a different time. The variation in potency of tinctures of strophanthus ran parallel to that of digitalis. Some samples were 80 per cent below standard and others 430 per cent above standard. The variation between manufacturers' preparations was very marked, and the variation between samples of the same manufacturer was also marked.

Ephedrine in Bronchial Asthma.—The conclusions drawn by MacDermot from his experiences are that ephedrine produces well-marked antispasmodic effects in asthma, and that these are of longer duration than those produced by epinephrine in similar cases, and that repeated doses may be safely given over prolonged periods.

Laryngoscope, St. Louis

36: 235 312 (April) 1926

Roentgen Ray Examination of Paranasal Sinuses, Optic Canals, Pharynx and Larynx H A Goalwin, New York —p. 235
Diagnosis and Treatment of Paranasal Sinus Infections in Infants and Young Children Under Ethylene Anesthesia. L W. Dean, Iowa City. —p 257
Fracture of Face (Superior Maxillae). W. A. Boyce, Los Angeles —p 266
Puncture Irrigation of Sphenoidal Sinuses with New Instrument. A. Lobell, New York —p 270
Aberrant Pulsating Vessels in Pharyngeal Wall. H. Dupuy, New Orleans —p 283
Posttonsillectomy Hemorrhage Due to Atropine. C. W. Jennings, Greensboro, N C —p 287.
Is Differential Diagnosis Between Middle and Internal Ear Deafness Possible? A G Pohlman, St. Louis, and F. W. Kranz, Geneva, Ill. —p 289
Diagnosis of Tuberculous Otitis: Case. M. E. Kahn and S J. Pearlman, Chicago —p 299
Egg Shell in Larynx: Case J. I. Berlin, Jersey City, N. J —p 304.
Bilateral Mastoiditis in Twins Accompanied by Dentition and Complicated by Facial Paralysis· Cases. J. M. Mayer, New York.—p. 305.

New Jersey Medical Society Journal, Orange

23: 155 202 (April) 1926

Some Phases of Thyroid Disease F H Lahey, Boston —p. 155.
Value of Roentgen Ray in Diagnosis E. E Downs, Swedesboro —p. 160
Diagnosis of Tuberculosis J. R Morrow, Ridgewood —p 163.
Prevention of Rickets—Public Health Problem J. Levy, Newark —p 165
Uterine Hemorrhage· Causes and Treatment E. Novak, Baltimore —p 167
Referred Pains of Rectal Origin J F. Montague, New York —p. 171.
Treatment of Certain Cardiac Emergencies H. E. B. Pardee, New York —p 172
*Operation for Abductor Paralysis of Hip P. C. Colonna, New York. —p 177

Operation for Abductor Paralysis of Hip.—The operation proposed by Colonna is said to be of value in cases with paralysis of the hip if the quadriceps femoris muscle is active. It is proposed to take advantage of a portion of the quadriceps femoris muscle by detaching the long head, the rectus femoris, from its two origins and freeing this portion from its bed for a few inches; this long head is then brought through the fascia lata and is placed superficially to the tensor fascia lata, after which it is inserted into the crest of the ilium or fascia covering the paralyzed gluteus medius muscle.

New York State Journal of Medicine, New York

26: 335-374 (April 15) 1926

Use of Schick Test Before and After Injection of Toxin-Antitoxin for Immunization. W. H. Park, New York.—p. 347.
Physical Agents in Treatment of Some Common Dermatoses. A. Rostenberg, New York.—p. 349.
Psychiatric Problems in Care and Management of Delinquent Children in New York State. V. C. Branham, Ellenville.—p. 350.

Radiology, Chicago

4: 273-364 (April) 1926

Gallbladder Diagnosis from Standpoint of Surgeon. E. A. Graham, St. Louis.—p. 273.
Evolution of Early to Late Galltract Disease. B. B. V. Lyon, Philadelphia.—p. 279.
Clinical Study of Cholecystitis with Aid of Cholecystography. O. C. Zink, St. Louis.—p. 286.
Practical Value of Graham-Cole Method in Diagnosis of Gallbladder Disease. A. W. George, Boston.—p. 292.
Technic for Intravenous Infusion of Sodium Tetra-Iodophenolphthalein in Cholecystography. L. J. Liest, Milwaukee.—p. 300.
Roentgenologic Exploration of Bronchial Tubes with Iodized Oil (Lipiodol). J. Forestier, Paris.—p. 303.
Radioactive Substances and Their Therapeutic Uses and Applications. J. Muir, New York.—p. 310.
Physical Standards of Protection Against Roentgen-Ray Dangers. A. Mutscheller, New York.—p. 314.
Erythema Doses in Absolute Units. W. H. Meyer and Otto Glasser, New York.—p. 320.
Roentgen-Ray Findings in Lobar Pneumonia. W. W. Belden, New York.—p. 329.
Potter-Bucky Diaphragm Technic. E. C. Jerman, Chicago.—p. 336.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Experimental Pathology, London

7: 47-94 (April) 1926

Sanocrysin in Treatment of Tuberculosis in Rabbit. S. L. Cummins.—p. 47.
*Antigenic Properties of Precipitates Produced by Interaction of Diphtheria Toxin and Antitoxin. II. P. Hartley.—p. 55.
*Volumetric Measurement by Drops in Bacteriologic Technic. P. Fildes and W. A. M. Smart.—p. 68.
Differences in Cell Content Shown by Staining with Acid and Alkaline Salts of Congo: Demonstrating Elastic Tissues. T. H. C. Benians.—p. 79.
Rous Fowl Sarcoma No. 1. I. Filtrability. W. E. Gye and C. H. Andrewes.—p. 81.
*Self-Control and Inhibition in Suprarenal. W. Cramer.—p. 88.

Antigenic Properties of Diphtheria Toxin and Antitoxin.—With the use of the same diphtheria toxin and antitoxin, an overneutralized, a neutral and an underneutralized (toxic) mixture have been prepared by Hartley. The antigenic properties of the washed precipitates, which separated from these mixtures, have been investigated. The toxic and antigenic properties of these precipitates bear a close relationship to the nature of the mixture from which they are derived. The precipitate from the overneutralized mixture was atoxic, and its antigenic activity was small; the precipitate from the neutral mixture was also devoid of toxicity, but it was a good antigen; the precipitate from the toxic mixture was itself toxic when injected in relatively large doses, and it was also a remarkably active antigen. The precipitates contain less than 1 per cent of the total nitrogen present in the mixtures from which they separate. Some evidence has been obtained which suggests that the large amount of extraneous nitrogenous compounds which toxin-antitoxin mixtures contain interferes with the production of antitoxin. Antitoxin production follows the injection of very small amounts of those precipitates which separate from neutral or toxic mixtures.

Volumetric Measurement by Drops.—The effect of the rate of delivering drops on the weight of the drops is demonstrated by Fildes and Smart, and the relation of the external diameter of the dropping-tube to the weight of the drop is shown over the whole range in which drops of water can be delivered in air. Nomograms have been prepared to show at a glance the relationships between drop-weight, drop-rate and the size of the pipet.

Self-Control and Inhibition in Suprarenal.—Cramer asserts that the suprarenal possesses the power to control its functional activity in such a way as to prevent the gland from stimulating itself to complete exhaustion. The existence of such a mechanism is necessitated by the fact that the gland is stimulated to secretion by the sympathetic, and secretes as its specific hormone a substance—epinephrine—which itself specifically stimulates the sympathetic. It is shown that the injection of epinephrine and also prolonged feeding with thyroid produce characteristic changes in the suprarenal medulla, which effect a "self-control" of the gland. In addition, there is a mechanism which effects an "inhibition" of the functional activity of the gland. This mechanism is located in the cortex and manifests itself as a disappearance of the cortical lipoid. It can be most readily demonstrated by exposing an animal to conditions such as a hot environment, under which an activity of the gland would lead to the death of the animal by heatstroke. The bearing of these conceptions on the pathology of the suprarenal and thyroid is discussed.

Journal of Pathology and Bacteriology, Edinburgh

29: 141-223 (April) 1926

*Occurrence of Brucella Abortus and Mycobacterium Tuberculosis in Cows' Milk G. S. Wilson and M. M. Nutt.—p. 141.
Bacterial Variation: Alleged Convergent Phenomena Exhibited by B. Typhosus and B. Enteritidis, Gärtner. A. N. Goyle.—p. 149.
*Reticle of Endothelial Cells in Thyroid and Parathyroid. G. S. Williamson and I H. Pearse.—p. 167.
Heterologous Cancer Grafts: Growths of Mouse Cancer in Rats. J. Gheorghiu.—p. 171.
Influence of Thyroid Feeding on Islets of Langerhans in Guinea-Pig. G. R. Cameron.—p 177
Epidemic Affecting Stock Rabbits. G. R. Cameron and F. E. Williams.—p. 185.
*Arthritic Muscular Atrophy: Oxygen Consumption of Atrophied Muscles. A. E. B. Harding.—p. 189.
*Calcification in Rabbit's Brain. C. Da Fano and J. R. Perdrau.—p. 195.
Four Human Blood Groups: Agglutination Titers; Abnormal Donors. A. R. Jones and E. E. Glynn.—p. 203.

Abortus and Tubercle Bacilli in Cow's Milk.—Wilson and Nutt assert that about 5.7 per cent of single milks and 8.8 per cent of mixed milks are infected with *Brucella abortus.* Incidentally, 13 per cent of mixed milks have been found to contain the tubercle bacillus.

Histology of Thyroid and Parathyroids.—A reticle of endothelial cells is described by Williamson and Pearse in the thyroid and parathyroid bodies. Individual cells of this reticle appear, under certain circumstances, as large stellate granular cells. These stellate cells are compared to the Kupffer cells of the liver. The contents of the cytoplasm of the reticulo-endothelial cells vary with variations in the functional activity of the thyroid and parathyroid glands.

Oxygen Consumption of Muscle.—Harding states that the oxygen consumption of muscle wasted as the result of an arthritis is definitely increased above the normal, whereas that of muscles wasted as the result of disuse is unaltered.

Calcification in Rabbit's Brain.—An incrustation of nerve cells and a deposition of either globular or granular material have been observed by Da Fano and Perdrau in the brains of two rabbits which, owing presumably to partial immunity, had clinically recovered from an herpetic encephalitis. In addition, in one of them, the parasites of so-called spontaneous encephalitis had been found. Both incrustations and depositions were confined to brain areas in which a severe destructive infiltrative and reactive process had occurred. Their histologic aspect was suggestive of a process of calcareous degeneration, but microchemical reactions showed that they were due to a precipitation of iron salts on necrotic nerve cells and on a substance having in the specimens a coagulated appearance. These changes having occurred during the evolution of an inflammatory process, the supposition is that both the incrustating iron salts and the coagulable material had a hematogenous origin, and were presumably connected with the presence in the affected brain regions of an exudation possibly containing hemoglobin.

Medical Journal of Australia, Sydney

1: 399-422 (April 10) 1926

Treatment of General Paralysis of Insane by Malaria. R. S. Ellery.—p. 401.
Diagnosis of Tuberculosis of Bones and Joints. R. M. Downes.—p. 404.
Infectious Mononucleosis: Two Cases. P. E. W. Smith.—p. 407.

Archives des Maladies du Cœur, etc., Paris

19: 217-279 (April) 1926

*Atrioventricular Bradycardia. D. Danielopolu and G. G. Proca.—p. 217.

Auriculoventricular Heart Rhythm.—The whole of this profusely illustrated issue is devoted to Danielopolu and Proca's research on the rhythm as long studied in two clinical cases. They explain the mechanism of the transient transformation of auriculoventricular bradycardia into flutter. They also describe the action on the heart rhythm of the vagus test, compression of the eyeball, digitalis, epinephrine, efforts, forced respiration and swallowing. There is reported a case of atrioventricular bradycardia with electrocardiograms revealing a ventricular complex between two auricular complexes. In another observation the atrioventricular rhythm coexisted with a partial auricular flutter. The technic is given for exploration of the auriculoventricular rhythm; its graphic character and forms, anatomic location of the contractions, and the mechanism of heart block in general.

Archives de Médecine des Enfants, Paris

29: 185-248 (April) 1926

Kala-Azar in Children in France. P. Giraud.—p. 185.
*False Kernig Sign in Poliomyelitis. L. Morquio.—p. 209.
Adiposogenital Syndrome with Dwarfism. G. Schreiber and G. Boulanger-Pilet.—p. 215.
Mediastinal Pleurisy in Children. J. Comby.—p. 220.

False Kernig Sign in Acute Anterior Poliomyelitis.—Morquio describes what he calls the pseudo-Kernig sign, observed in the painful form of anterior poliomyelitis, in South America. When the child is made to sit up, it protests with distress, on account of the pain, throwing its head back and stiffening the neck and spine. But if it is placed on the edge of the bed, the thighs gently flexed, the pain and rigidity disappear, and the child no longer resists. The rigidity in this case is more pronounced than in meningitis. There is no parallelism between the functional disturbance and the cell changes. The false Kernig sign does not seem to be connected with changes in the cerebrospinal fluid. The sign is absent in the meningitis form of anterior poliomyelitis. It may be of help in diagnosis of dubious cases, or in differentiation from meningeal conditions.

Presse Médicale, Paris

34: 529-544 (April 28) 1926

*Action of Pituitary Extract on Diuresis. M. Labbé et al.—p. 529.
Intravascular Migration of Projectiles. Binet and Péron.—p. 530.
*Migration of a Projectile. De Saint-Avid and Léonard.—p. 532.
*Has the Appendix an Endocrine Function? Moutier and Fouché.—p. 532.

Action of Pituitary Extract on Diuresis.—Labbé, Violle and Azerad's research demonstrated that injections of pituitary extract, especially of the posterior lobe, seem to reduce the urine secretion in persons with normal water metabolism. The diuresis appeared unchanged if the injections were given before the night sleep. This is compared with Smith and Closky's results in rabbits. In these animals, oliguria from pituitary extract changed into polyuria under the influence of anesthesia. The decrease of urine secretion may be explained by the vasoconstrictor action in the kidney of the pituitary extract. It is partly inhibited under the general vasodilatation that occurs during sleep.

Migration of a Projectile.—De Saint-Avid and Léonard found in the right lung a scrap of projectile which had entered the left thigh six years before. The man was complaining of severe pain in the region of the right nipple, and bloody sputum. Roentgenograms showed a shadow in the right lung hilum, the size of a pea. Auscultation revealed fine, moist râles at the point of the scapula. The lesions of the lung seemed to be of a chronic character, the projectile having been carried to the lung in a short time.

Has the Appendix an Endocrine Function?—Moutier and Fouché observed notable obesity after appendectomy in five cases; disturbances of ovarian functioning in three; dysmenorrhea or amenorrhea, persisting for one to three years, with hyperthyroidism. In two instances removal of the appendix had apparently induced a syndrome of infantilism. Their conclusion is that the appendix seems to have a certain endocrine function. Its insufficiency may be gradually compensated in chronic cases. All their patients were operated on at the onset of appendicitis.

34: 545-560 (May 1) 1926

*"Dietotoxic Foods." G. Mouriquand.—p. 545.
*Treatment of Ovarian Insufficiency. A. Crainicianu.—p. 545.
Bacteriophage Treatment of Urinary Infections. A. Ravina.—p. 548.

"Dietotoxicity": Conditionally Toxic Elements in Foods.—In Mouriquand's experiments on guinea-pigs, about 2 cc. of cod liver oil was added to the food, consisting of maize, hay and lemon juice. No general or bone disturbances were noted. Then the hay was omitted; the animals then developed grave lesions of the bones with spontaneous fractures and hemorrhages. All these symptoms disappeared as soon as hay was given again, although the oil was still continued. Evidently cod liver oil may be a bone nutrient with a balanced diet; or it may induce dystrophic changes with an unbalanced diet. Substances nontoxic in themselves or with normal feeding seem to reveal a latent toxicity with an unbalanced diet. These "dietotoxic" substances may not induce typical phenomena of poisoning or anaphylaxis; but may possibly entail phenomena of autointoxication or idiosyncrasy.

Calcium in Treatment of Ovary Insufficiency.—Crainicianu found a reduced sympathetic and parasympathetic tonus in over 100 cases of congenital or acquired ovarian insufficiency. Calcium was administered to influence the tonus. Four or six daily doses of 1.5 Gm. of calcium lactate were given by the mouth for ten days; if necessary, repeated after a few days. The tonus of the involuntary nervous system rose to normal and all pathologic symptoms completely disappeared two or three weeks later. Large doses of the calcium did not induce digestive disturbances. It seems that accumulation of calcium may be necessary for restoration of the disturbed vagosympathetic balance from ovarian deficiency. The balance may be connected with the calcium ion concentration in the organism.

Chirurgia degli Organi di Movimento, Bologna

10: 209-316 (Feb.) 1926

*Tumors in Joints. F. Fedeli.—p. 209.
Hereditary Cleidocranial Dysostosis. Godoy Moreira.—p. 225.
*Age of Fractures. O. Andrei.—p. 255.
Detachment of Inferior Epiphysis of the Humerus from Birth Injury. U. Camera.—p. 294.

Sarcoma of the Knee.—The myxochondrosarcoma developed in a knee that had been injured at football eighteen months before. A chronic tuberculous apical process had misled the diagnosis at first, but the good general condition, the normal temperature of the knee, and the centrifugal spread of the swelling, the rapid increase in size, the tenderness of the joint interline and the enlarged subcutaneous veins helped to differentiate the malignant tumor.

Roentgenologic Gage of Age of Fracture.—Andrei lists the special serial roentgenoscopic findings characteristic for the ages of the healing process, as studied in 269 cases. He gives a number of roentgenograms and an English summary of his conclusions.

Clinica Medica Italiana, Milan

56: 475-565 (Dec.) 1925

*Calcium Chloride in Treatment of Effusions. F. Oriani.—p. 475.
Chenopodium in Helminthiasis. V. Ronchetti.—p. 490.
*Morphine and Urinary Secretion. E. Porru.—p. 493.
Changes in Blood Injected into the Air Passages. G. Spagnol.—p. 509.
Pathogenicity of Trichomonas. V. Ronchetti.—p. 520.
*Skin Tuberculin Test. Zuccòla.—p. 523.
*The Viscosity of the Blood. O. Da-Riu.—p. 535.
Action of Sodium Cacodylate on the Blood. P. Bissiri.—p. 545.

Calcium Chloride in Treatment of Effusions.—Oriani analyzes eight cases of pleurisy with effusion and two of polyserositis in all but one of which calcium chloride proved promptly effectual. Diuresis was promoted and the effusion was resorbed. The effect was most rapid and intense when salt was omitted from the diet. The ages ranged from 15 to 49. From 15 Gm. a day, at first, the dose was pushed to

30 Gm in four or five days, and the effusion had generally disappeared by the sixth day

Influence of Morphine on Diuresis.—Porru warns not to forget that, in minute doses morphine and its derivatives stimulate secretion of urine, while doses above 0 0001 Gm per kilogram of weight progressively check diuresis

The Skin Reactions—Zuccola emphasizes that the promptness or retarded appearance of the positive response to the tuberculin skin test is an important element for estimation of the outcome of the test It is important also to compare the results of several tests at rather long intervals to estimate the trend up or down

The Viscosity of the Blood in Relation to Heart Functioning.—Da-Riu concludes from the data presented that increased viscosity of the blood after slight physical exertion testifies to weakening of the heart Squill reduces the diastolic pressure and also tends to lower an abnormally high systolic pressure It increases the viscosity at first, but later reduces it, and has proved useful in this line

Clinica Pediatrica, Modena

8: 65 128 (Feb) 1926

*Bradycardia in Children G de Toni —p 65
Laws of Growth the First Year E Mensi —p 99

Bradycardia in Children—De Toni's critical study and personal observations include a case described here in detail in which congenital heart block induced at the age of 8 a Morgagni-Adams-Stokes syndrome in a boy Stimulation of the vagus induced syncope This seems to conflict with the present theories on heart block The boy was treated symptomatically and has developed well, with no return of the syncopes during the seven months since The pulse is still 40, with some extrasystoles He rides a bicycle and takes long walks

Policlinico, Rome

33: 541 575 (April 19) 1926

*Treatment of Pleural Effusion P Berri —p 541
*Sending Blood to Laboratory C Toscano —p 545
The Seashore from Therapeutic Standpoint Gioseffi —p 547.

Treatment of Pleural Effusion.—Berri reports favorable results from intrapleural injection of 2 cc of a 12 5 per cent solution of potassium iodide in five cases of persisting effusion, in men, aged 16 to 68 In one, the effusion was secondary to heart disease

Technic for Keeping Blood for Bang Test for Glucose.—Toscano states that addition of a little sodium fluoride will preserve the blood intact for four or six days without interfering with the Bang test for sugar later The blood keeps well also when mixed with Bang's dealbuminating fluid

Archivos Latino-Amer. de Pediatría, Buenos Aires

19: 1307 1391 (Dec) 1925

*Tuberculoma of the Cecum F Bazan and Vallino —p 1307
The Blood in Congenital Syphilis P Rueda —p 1311
*Echinococcus Cyst of the Lung J Bonaba —p 1337
Prepuberal Dementia Praecox N Leone Bloise and Jauregui —p 1340
Diphtheria in the Recently Born J J Leunda —p 1346
Cerebral Echinococcus Cyst and Hydrocephalus Bargo —p 1349
Localized Intraspinal Abscess A Rodriguez Castro —p 1360
Pure Azotemic Form of Acute Nephritis After Pneumonia J Bonaba —p 1364

Tuberculous Intestinal Tumor.—When the abdomen was opened, in the girl of 14, the peritoneum was found studded with tuberculous granulations, and the attempt to remove the tuberculoma in the cecum was abandoned Sixteen months later a laparotomy showed the peritoneum apparently sound, and the bowel tumor was extirpated There has been no recurrence during the five years to date Bazan and Vallino have collected from the literature 154 cases of resection of tuberculoma of the cecum, with 35 per cent of definite cures, in 20 per cent pulmonary tuberculosis developed later, and the outcome is unknown in 32 per cent

Hydatid Cyst of Lung with Pulmonary Tuberculosis—Bonaba relates that an exploratory puncture for the assumed effusion revealed the echinococcosis but induced violent coughing at once, with vomica, which evacuated the cyst The general condition was good for a time but then symptoms of rapidly progressive pulmonary tuberculosis developed on that side Others have reported cases of associated or consecutive echinococcosis and tuberculosis of the lung, generally in patients that had been operated on

Deutsche Zeitschrift fur Chirurgie, Leipzig

195: 217 352 (April) 1926

*Blood Pressure Changes During Operations V Schaefer —p 217
Consequences of Excision of Normal Lymph Nodes H Baum —p 241
*Experimental Plastic Repair of Bile Ducts P Muzeneek —p 267
*Hydrocele and Workmen's Compensation K Scheele —p 286
Surgical Observations on Herpes H Schroeder —p 338
Spontaneous Hematoma of Abdominal Wall W Blocl —p 341
Myoma of Gubernaculum Testis R Bittrolff —p 344
Fibroma of Mesentery H Brauneck —p 345

Reflex Blood Pressure Changes During Operations—Schaefer recorded the blood pressure in 220 patients during operations on various regions and for various conditions In the greater number the blood pressure was uninfluenced It was increased in a few cases, in which the patient s general condition was good Lowered blood pressure, which is more dangerous, was observed frequently when the general condition was poor, and especially during operations on certain regions Operative injury or irritation of organs in the splanchnic region may cause a reflex loss of vascular tonus of this region, producing collapse Irritation of the carotid in goiter operations and of the sensory nerves easily leads by reflex action to lowered blood pressures Strong irritation is necessary to lower blood pressure Heightened blood pressure is caused by irritation of medium intensity When the vasoconstrictor system is already weakened by disease, an irritation otherwise slight acts as severe Reflexes affecting blood pressure may be excited from any part of the body and Schaefer believes that the operation itself is thus responsible for many cases of altered blood pressure heretofore ascribed to the narcotic Ether or chloroform will lower blood pressure in weak persons In strong persons ether has usually no effect on the blood pressure, chloroform lowers it moderately Local anesthesia raises blood pressure in the strong through its psychic effect

Experimental Studies in the Plastic Repair of the Bile Ducts—From fifty-three experiments on dogs, Muzeneek regards bridging the defect with a rubber drain, covered with suitable tissue flaps, as the most practical method of plastic repair of fresh injuries of the bile ducts where choledochoduodenostomy or hepaticoduodenostomy is impossible The drain assures the flow of bile and prevents stenosis of the newly formed passage It is necessary that the ends of the drain be firmly sutured to the duct walls, for if it slips out during the granulation process, obliteration of the passage results He found omentum and segments of veins the best covering The tissues soon degenerated into scar tissue, which, in shrinking, shortened the defect, drawing the duodenum toward the liver The inner surface of the tube of scar tissue became covered with epithelium Further studies must determine how long it is necessary for the rubber drain to remain in place, but these experiments have emphasized the desirability of its remaining as long as possible

Hydrocele and Workmen's Compensation—Scheele studied the evidence in 133 cases of alleged traumatic origin or aggravation of hydrocele Because of its mobility, force applied directly to the testicle must possess a certain suddenness if it is to cause injury Although the hydrocele itself may not form until two or three months have elapsed and external signs of injury have disappeared, the immediate subjective results of the injury are severe If these immediate results are lacking in the history, suspicion is cast on the traumatic origin The most frequent consequence of trauma to the testicle is hematoma outside the vaginalis, this may lead to hematoma within the vaginalis, which in turn may lead through irritation from hemorrhagic remains or traumatic periorchitis to hydrocele Hematoma within the vaginalis however is rare, except where hydrocele already exists Hydrocele caused by indirect force, such as strains in lifting, jumping backward or slipping when carrying a heavy burden, is rare, but possible When infection of the testicle or epididymis exists at the time of the accident, the question of traumatic origin of the hydrocele becomes more complicated, for hydrocele may develop in local infection without trauma; on the other hand, the trauma may be responsible for aggravation of the original condition, which might not otherwise have led to hydrocele. A large hydrocele is continually exposed to trauma. Injury may make the condition worse or introduce complications, but in considering the question from the compensation angle, the possibilities in the natural course of the trouble, such as hemorrhagic periorchitis and spontaneous rupture of the wall, must be remembered.

Klinische Wochenschrift, Berlin

5: 777-824 (April 30) 1926

Intrapulmonary Pressure and the Circulation. Bürger.—p. 777. C'td.
*Arteriovenous Fistula. H. Eppinger et al.—p. 781.
*Invisible and Uncultivable Bacilli. E. Friedberger.—p. 782.
*Inhibiting Culture Broth. E. G. Dresel.—p. 789.
*Ions in Growing Bone. W. Stoye.—p. 791.
*Epizootics in Mice. T. Okamoto.—p. 795.
Pregnancy and Diagnosis of Sex. H. Kleesattel.—p. 796.
"Haff Disease" F. Dorbeck.—p. 799.
Fatigability of Pupil Reflexes. E. Schlesinger.—p. 799.
Acid, Alkali and Insulin. G. Hetényi.—p. 800.
Roentgen Ray Leukoderma. H. Wachtel.—p. 800.
Tumor or Tuberculosis of Lungs. R. Lenk.—p. 801.
Birth Injury and Brain Disease. F. Wohlwill.—p. 805. C'td.

Arteriovenous Intercommunication.—Eppinger, Kisch and Schwarz connected the abdominal aorta and vena cava in cats by a tube which could be closed. After opening the connection, the arterial pressure dropped by 40 mm. of mercury; the pulse increased by 14 beats per minute and the volume of the single beat increased by 0.96 cc. in one of their experiments. With this short-circuiting of the blood stream, in spite of the lowered peripheral resistance and arterial pressure, the heart has to perform more work because of the increased output.

Invisible and Uncultivable Bacilli.—Friedberger points out that the isolation of germs rarely succeeds in the beginning of epidemics. The findings are usually negative in the first cases of cholera and influenza. He explains this by the possibility that the real infection is caused by an uncultivable and filtrable form of the germ. The known visible forms develop later and are less virulent. Three years ago he was able to change typhoid bacilli into such a form which produced infection in guinea-pigs and which was far more potent in immunization than heated cultures. Similar experiments have been reported recently with tuberculosis bacilli. If the filtrability of the tuberculous virus had been detected previously to Koch's discovery, the acknowledgment of the visible forms as causative agents would have been delayed, just as has been the case with scarlet fever streptococci. He finds increasing evidence as to the etiologic significance of the Weil-Felix bacillus for typhus fever. He points to the epidemiologic significance of these data, and sees a true nucleus in Pettenkofer's theory of the necessity of some sort of ripening of the germs before they become infectious.

Inhibiting Culture Bouillon.—Dresel treated broth with 10 per cent of its weight of charcoal. The medium became acid and the growth of pathogenic germs was strongly inhibited. He regards this change of reaction as a valuable addition to the absorbing power of the charcoal.

Ions in Growing Bones.—Stoye describes a method for histochemical demonstration of soluble phosphates in growing bones. They are localized in the form of a narrow transverse band in the zone of cartilaginous cells.

Epizootics in Mice.—Okamoto observed among animals several instances of activation of a latent infection by accidental agents. Such was the case with certain mice infected with sublethal doses of mouse-typhoid. Injection of the homologous bacteriophage was the provoking factor. Injection of organ extracts from rabbits awakened a latent paratyphoid B infection in guinea-pigs. Some female guinea-pigs died after labor under symptoms of grave diplococcus septicemia. The male animals injected with the germs seemed resistant until a sudden frost set in. The next day five out of eight males that had been infected previously developed the same symptoms as the females.

Monatsschrift für Kinderheilkunde, Leipzig

32: 1-96 (April) 1926

*Digitalis. B. Samet and O. Tezner.—p. 1.
Puberty Metabolism. O. Göttche.—p. 22.
Ferments in Infant's Stomach. K. Waltner.—p. 37.
*Concentrated Buttermilk. H. Weil.—p. 40.

Digitalis.—Samet and Tezner tested the action of digitalis on healthy and sick children without insufficiency of the heart. Healthy children are as a rule comparatively resistant. In some of the pneumonia patients smaller doses produced arrhythmia. They do not attempt to decide whether its use is beneficial in pneumonia or not, but emphasize the necessity for continuous control, if it is administered.

Concentrated Buttermilk.—Weil reports good results with a concentrated food consisting of buttermilk with addition of 2 per cent flour and 13 per cent sugar. It is advisable for infants who have little appetite or drink badly, and especially with intolerance of fat, nervous vomiting or pylorospasm. The mixture contains about 100 calories per hundred grams. Consequently 100 Gm. per kilogram of body weight is sufficient food for a healthy infant.

Zeitschrift für Tuberkulose, Leipzig

45: 1-94 (April) 1926

*Primary Infiltration. F. Redeker.—p. 1.
Serial Sedimentation Tests in Diagnosis of Tuberculosis. Büchler and Nobel.—p. 7.
Tuberculin Sensitiveness and Action. H. Selter.—p. 11..
*Tuberculosis in Schools. K. A. Worringen.—p. 27.
"Myopia and Tuberculosis." G. Hirsch.—p. 32.
*"Wassermann's Tuberculosis Antigen." M. Pinner.—p. 34.
"Paralysis of Diaphragm." Hauke.—p. 38.

Primary Infiltration.—Redeker describes the clinical and especially the roentgenologic aspects of primary tuberculous lesions of lungs. A perifocal inflammation is the rule. It spreads toward the hilum, but it is most pronounced at both ends ("bipolar").

Tuberculosis in Schools.—Worringen concludes that school predisposes to the infection by lowering the resisting powers of the children. Four hours a day should be the maximum for elementary schools, and five hours for the upper grades, and no home work. Daily gymnastics are as essential as brushing the teeth and washing.

"Wassermann's Tuberculosis Antigen."—Pinner emphasizes that nearly all the active substances of the Wassermann tuberculosis antigen are soluble in alcohol. Divergent opinions of other authors are due only to the variations in the antigen and to the inaccurate methods they used.

Svenska Läkaresällskapets Handlingar, Stockholm

51: 207-237 (Dec. 31) 1925

*Treatment of Hemophilia. H. v. Samson-Himmelstjerna.—p. 207.
The Filament Galvanometer and the Measurement of the Heart's Action Current. W. Einthoven.—p. 213.
Actinomycosis; Two Cases of Foreign Body in Floor of Mouth. S. Norlén.—p. 227.

Nature of Hemophilia and Causal Treatment.—The treatment proposed is based on the familiar fact that hemophilia skips the female link in its transmission. It seems logical, therefore, to utilize in treatment the sex hormone that distinguishes the female. There seem to be waves of more or less pronounced preparedness for hemorrhages, explaining the periodicity of the tendency to bleed. Instances are known in which a change to a tropical or mountain climate has arrested this tendency. The influence of sunlight may explain this; the skin of certain bleeders seems to be abnormally delicate. Injection of blood probably owes its efficacy to protein shock; this may be the explanation of the beneficial effect of roentgen irradiation of the spleen, or injection of own blood. It might be possible to realize a shock treatment by way of the mouth. Everything points to the assumption that hemophilia is due to the occasional or periodic formation of a substance which damages the vessels. Ovarian extract (from cows), heliotherapy and shock treatment form a threefold mode of attacking hemophilia. There does not seem to be any danger from this artificial hermaphroditization with ovarian extract in males. No attempts to treat hemophiliacs on this basis have been tried, but it is advocated as theoretically rational.

JOURNALS ABSTRACTED IN THE CURRENT MEDICAL LITERATURE DEPARTMENT, JANUARY-JUNE 1926

Abstracts of important articles in the following journals have been made in the Current Literature Department of THE JOURNAL during the past six months. Any of the journals, except those starred, will be lent by THE JOURNAL to subscribers in the United States and to Fellows of the American Medical Association for a period not exceeding three days. Two journals may be borrowed at a time. No foreign journals are available prior to 1921, nor domestic journals prior to 1923. Requests for periodicals should be addressed to the Library of the American Medical Association and six cents in stamps should be enclosed. This covers the average expense of mailing a journal. Thus most of these journals are accessible to the general practitioner.

Acta Chirurgica Scandinavica. Irreg. 20 Swedish crowns. Stockholm.
Acta Medica Scandinavica. Irreg. $5.50 per vol. Stockholm.
Acta Pædiatrica. Irreg. $5 per vol. Stockholm.
Acta Tuberculosea Scandinavica. Irreg. $6 per vol. Copenhagen.
American Heart Journal. Bi-m. $7.50. St. Louis.
American Journal of Anatomy. Bi-m. $7.50 per vol. Philadelphia.
*American Journal of Diseases of Children. M. $4. A. M. A., Chicago.
American Journal of Hygiene. Bi-m. $6. Baltimore.
American Journal of the Medical Sciences. M. $6. Philadelphia.
American Journal of Obstetrics and Gynecology. M. $8.50. St. Louis.
American Journal of Ophthalmology. M. $12. Chicago.
American Journal of Pathology. Bi-m. $5. Boston.
American Journal of Physiology. M. $6 per vol. Baltimore.
American Journal of Psychiatry. Q. $5 per vol. Baltimore.
American Journal of Public Health. M. $5. New York.
American Journal of Roentgenology and Radium Therapy. M. $10. New York.
American Journal of Syphilis. Q. $10. St. Louis.
American Journal of Tropical Medicine. Bi-m. $5 per vol. Baltimore.
American Review of Tuberculosis. M. $8 per vol. New York.
Anales de la Facultad de Medicina, Universidad de Lima. Irreg. 1.50 sol.
Anales de la Facultad de Medicina, Universidad de Montevideo. M. 6 pesos.
*Anales de Sociedad Médico-Quirúrgica del Guayas. M. $0.60 per issue. Guayaquil.
Annales d'Anatomie Pathologique. M. 65 francs. Paris.
Annales de l'Institut Pasteur. M. 70 francs. Paris.
Annales des Maladies Vénériennes. M. 70 francs. Paris.
Annales de Médecine. M. 60 francs. Paris.
Annals of Clinical Medicine. M. $7. Baltimore.
Annals of Medical History. Q. $8. New York.
Annals of Otology, Rhinology and Laryngology. Q. $6. St. Louis.
Annals of Surgery. M. $10. Philadelphia.
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Acad —Acadamy
Am —American
A —Association
Coll —College
Conf —Conference
Cong —Congress
Conv —Convention
Dist —District
Hosp —Hospital
Internat —International
M —Medical
Med —Medicine
Nat —National
Phar —Pharmaceutical
Phys —Physicians
Ry —Railway
S —Surgical
Soc —Society
Surg —Surgery, Surgeon

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MEDICINE: ITS ACCOMPLISHMENTS AND ITS NEEDS*

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KANSAS CITY, MO.

It is a great privilege to have lived in the present generation. Within its span more has been added to the sum of human knowledge than in any previous period of the world's history. The Golden Age it has been called—the Age of Science. Discovery after discovery has followed in such rapid sequence that the mind of ordinary man is awed with amazement. Fundamental principles of science, slowly comprehended through long periods of time past, have suddenly found practical application beyond even the vision of the dreamer. Through them man has been given mastery in a measure over land and sea and sky. The application of power to motion has revolutionized transportation and conquered space. By wire, by cable, by radio, through the air practically instantaneous communication around the world has been made possible. News and knowledge are thus promptly interchanged and the advances of one become the heritage of all. Machine power has lifted much of the burden from the human back and multiplied infinitely the possibilities of production. Cooperation has replaced segregation. Progress has been the watchword.

In the fields of medicine the workings of science have been none the less remarkable, though less obvious to the general eye. When the microscope first enabled us to comprehend the fundamental cellular structure of the body, the key to the ultimate interpretation of life was put in our hands. When Pasteur discovered the existence of other cellular organisms capable of attack on human cells, he gave to our science its first knowledge of the essential cause and nature of much of disease, and the new science of bacteriology was born. Through it pathology found a new interpretation and became a vital study. The culture tube and the reagent brought chemistry into the field, and through the three the laboratory became the center of medical investigation.

Brief though the span since the birth of these sciences, their contributions to human welfare have been numerous and of value inestimable. The knowledge of how to prevent many diseases has alone saved to the world countless lives and immeasurable expense. Cholera, which once with its death scythe stalked through nations, has become now but a name. Yellow fever, which almost annually gleaned its thousands of human lives and paralyzed commercial activity, has been driven to the far recesses of Africa, where the few cases reported in the past year evidence its dying gasps. The sanitary control of malaria and other infectious fevers made effective by Gorgas built the Panama Canal and rerouted the commerce of the world. Can one find figures in dollars and cents to estimate the commercial value alone of such contributions of preventive medicine? And these are only a few illustrations from this field.

Can one measure the numbers and the values of the lives of the many youngsters snatched from the jaws of diphtheria by the use of antitoxin, to say nothing of the anguish of apprehension and grief lifted from the hearts of parents? Typhoid alone forty years ago kept medical men supplied with a lucrative annual income, and its ravages in time of war frequently accounted for more lives than did bullets. Today through modern sanitation and with preventive inoculations, its existence has become a disgrace to the community and in an army almost a crime.

May these illustrations, few though they be, stand as a test to the efficiency of the "Great Medical Trust"—the only trust that ever existed to save billions of dollars and millions of lives and countless sorrow to mankind at the expense of its own sources of income.

CONTRIBUTIONS OF MEDICAL AND SURGICAL SCIENCE

The curative contributions of medical and surgical science have been no less notable, though obviously less noted. No one can estimate how many annually paid the toll of death in days gone by to what we may here call, in general, surgical diseases. With the almost inevitable infection and ofttimes death from wounds and surgical efforts, much of the body remained terra incognita until the postmortem table was reached. The immortal work begun by Lister in carrying the observations of Pasteur into the surgical field provided a revolution more significant than a revolution of arms—the one bringing peace and life, the other pain and death. The impunity with which the physical body could now be invaded enabled the bold surgeon to explore hidden disease and to bring to light the knowledge of their beginnings at a time when they might be amenable to cure; and from these early explorations an interpretation of hitherto unknown signs.

It seems almost strange in this day to recount that it was only in the eighties of 1800 that appendicitis was recognized as a definite entity and its sequences understood. Even as late as 1893 I heard a supposedly learned man say, "I have practiced medicine forty years and have never seen a case of appendicitis." And

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* President's address before the American Medical Association at the Seventy Eighth Annual Session, Washington, D C, May 17, 1927.